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ABSTRACT

The purpose of this North Carolina Standard Course of Study is to guarantee that all students have equal access to the same basic curriculum. It provides a detailed, integrated curriculum plan for all subjects at all grade levels. The document explains the philosophy and rationale underlying the curriculum, describes and outlines the theoretical taxonomy of thinking skills used in designing the plan, presents provisions for exceptional children, offers considerations for developing a thinking framework, and discusses guidelines for using the curriculum. The bulk of the guide presents the curriculum in the following subject areas: (1) arts education; (2) computer/technology skills; (3) English language arts; (4) healthful living; (5) mathematics; (6) science; (7) second-language studies; (8) social studies; and (9) work-force development, which includes sections on planning, the middle grades, agricultural education, business education, family and consumer sciences, health occupations, marketing education, career development, technical education, and trade and industrial education. Each section features an overview; the skills, goals, and objectives of the curriculum; and a grade-level strand guide. The guide emphasizes what students should know and be able to do as they progress through various levels of proficiency. Three appendices provide further details on vocational student organizations, minimum graduation requirements, and other information. (RJM)

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North Carolina

STANDARD COURSE OF STUDY

ED 431 211

Arts Education

English Language Arts

Healthful Living Education

Information and Computer Skills

Mathematics

Science

Second Language Studies

Social Studies

Workforce Development Education

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Division of Instructional Services

EA 029 740

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Public Schools of North Carolina
State Board of Education • Department of Public Instruction

North Carolina

STANDARD COURSE OF STUDY

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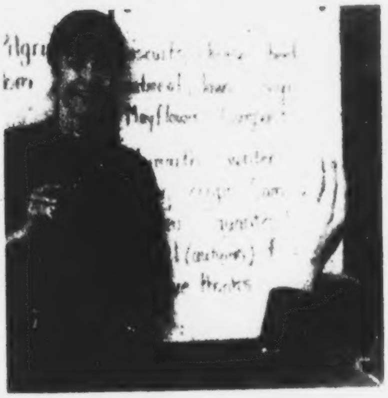

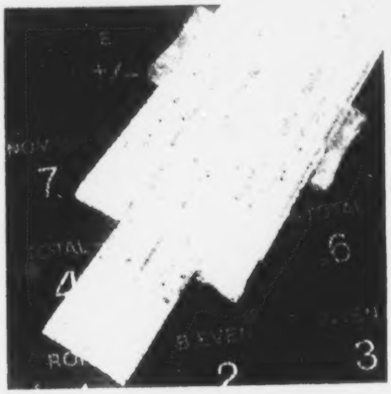
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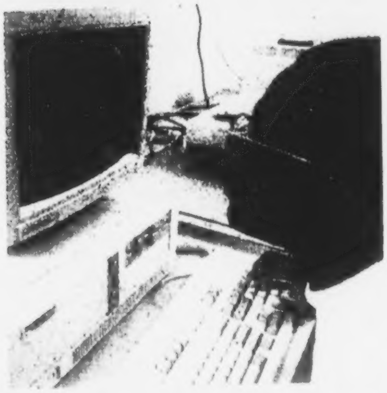

Public Schools of North Carolina State Board of Education Department of Public Instruction Instructional Services

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FOREWORD

North Carolina has had a ***Standard Course of Study*** since 1898. Since that time, the curriculum has been revised periodically to reflect the changing needs of students and society. The most recent total revision of the state curriculum occured in 1985. The 1985 ***Standard Course of Study*** reflected the knowledge, skills, and attitudes needed to function effectively in an industrial age. It also included efforts to develop mature thinkers and problem solvers.

In the years since 1985, we have witnessed a dramatic shift in the needs of business and industry, and society in general. These changes have been collectively heralded as the information age. The 21st century will bring new challenges in preparing students for the demands of an information age. While students must attain enabling skills such as reading, writing, and computing, they must also attain the new basics which include creative thinking and problem solving, interpersonal skills, negotiation and teamwork. Also since 1985, all the major content areas have developed National Standards which guide curriculum revisions. Major recent school reform efforts such as the ABC Plan with strong accountability components have necessitated an even more clearly defined state curriculum.

These changes, coupled with more in-depth learning at a much higher level, provide the foundation for current revisions to the ***Standard Course of Study***. The revisions are futuristic in outlook. They look at what students will need to know and be able to do to be successful in the 21st century.

Michael E. Ward

Phillip J. Kirk, Jr.

Michael E. Ward
State Superintendent of Public Instruction

Phillip J. Kirk, Jr.
Chairman, State Board of Education

ACKNOWLEDGMENTS

The Department of Public Instruction gratefully acknowledges the cooperation and assistance received from individuals and groups throughout the State in this current revision process. Without such cooperation, the revisions and printing of the ***North Carolina Standard Course of Study*** would not have been possible.

We wish to express a special thanks to:

- the Office of Instructional Services for providing the leadership and vision that guided the development of these documents. The untiring efforts of this staff contributed greatly to the completion of this task,
- office support staff in instructional services who, in addition to their on-going responsibilities, word processed the revised documents,
- the many local educators, parents, and business people who participated in the current revision process by serving on curriculum committees and reacting to draft documents,
- faculty from the institutions of higher education who advised the staff and assisted in the revision of the curriculum,
- the Communications and Information Division for technical assistance in the publication of the documents,
- Association for Supervision and Curriculum Development (ASCD) for allowing its ***Dimensions of Thinking*** to serve as a framework for this revision process,

The curriculum will continue to be revised and improved to meet the needs of the children of North Carolina.

INTRODUCTION

Standard Course of Study and Grade Level Competencies

K-12

Public Schools of North Carolina
Department of Public Instruction

INTRODUCTION

Background and Overview

History

North Carolina has maintained a Standard Course of Study since the 1890's. That document was a brief, simple guide which outlined the curriculum for the public schools. Every five to seven years since that time, the ***Standard Course of Study*** has been revised to reflect the needs of North Carolina students.

Following the passage of the Elementary and Secondary Reform Act in June of 1984, the area of Instructional Services within the North Carolina Department of Public Instruction began a revision of the ***Standard Course of Study***. These efforts to define a basic education program for the State resulted in two publications:

- ***The Basic Education Program for North Carolina's Public Schools*** (Adopted by State Board of Education in response to a legislative mandate) - outlines the curriculum, programs not confined to subject areas, general standards, material support, and staffing which should be provided in all schools throughout the state.
- ***The North Carolina Standard Course of Study*** (Adopted as policy by the State Board of Education) - sets content standards and describes the curriculum which should be made available to every child in North Carolina's public schools. It includes the subject or skills areas of arts education, English language arts, guidance, healthful living, information/computer skills, mathematics, science, second language studies, social studies, and workforce development education. Also included are the philosophy and rationale underlying the curriculum frameworks and considerations for developing a thinking framework, aligning curriculum and assessment, and providing for the needs of exceptional children.

Standard Course of Study

The revised ***Standard Course of Study*** has moved from a detailed, prescriptive curriculum guide to a more flexible guide to instruction, emphasizing what students should know and be able to do as they progress through various levels of proficiency and ultimately exit from high school. The revised curriculum focuses on themes and concepts rather than isolated facts. It emphasizes thinking skills and problem solving more than the memorization and recall of information.

The revised ***Standard Course of Study*** is based on recent research on how students learn. It is a curriculum that promotes integration through the identification of common skills and processes.

The ***Standard Course of Study*** includes the curriculum that should be made available to every child in North Carolina's public schools. Many public schools in the state presently offer an even more comprehensive curriculum. Therefore, in some curriculum areas, electives were also included. The ***Standard Course of Study*** is part of the Department of Public Education's continual improvement efforts. The curriculum will be revised on a regular basis to remain consistent with the changing needs of our nation, state, and local communities.

Philosophy and Rationale

Education has long served as the key to equal opportunity for American citizens. We should be proud of our schools. Historically, American schools have prepared students to join an industrialized economy and become contributing citizens in their communities.

Today, however, the challenge of education is to prepare students for a rapidly changing world. Students in modern society must be prepared to:
- compete in a global economy,
- understand and operate complex communication and information systems, and
- apply higher level thinking skills to make decisions and solve problems. American businesses seek students with the knowledge and skills to succeed in the international marketplace of today's information-based society. Whether at work or in post-secondary study, students must be able to apply what they've learned from their years of public schooling.

The purpose of the North Carolina ***Standard Course of Study*** is to guarantee that all students have equal access to the same basic curriculum. If public education is an avenue to equal opportunity, high standards must be set for all students. ***The Standard Course of Study*** does not seek to prescribe how schools should organize themselves or how teachers should instruct. Rather, the curriculum sets standards against which schools and teachers may judge their success.

Curriculum Integration

The Department of Public Instruction views integration as a curriculum implementation strategy which links the content and skills from various disciplines. There are various models of integration which seek to achieve an acceptable degree of interdisciplinary learning. Generally, these models use the language and methodology from more than one discipline and focus on unifying themes, issues, problems, concepts, and experiences. These models help the learner make connections among the individual disciplines and are based upon the following beliefs.

Integration:
- Mirrors the real world in which we live.
- Motivates students by making learning relevant to their personal lives.
- Adds coherence to vast amounts of information by making connections among disciplines.
- Addresses the overcrowded curriculum by viewing content as a "means" not an "end."
- Acknowledges reading, writing, speaking, listening, viewing, and the use of numbers as enabling skills within thinking processes.
- Fosters collaboration among students and teachers.

Although the North Carolina Department of Public Instruction strongly endorses the concept of integration among various disciplines, local school districts, schools, and classroom teachers are best able to develop curricular units which will be meaningful to the teachers and students at the classroom level. It is the responsibility of the State to set quality curriculum and performance standards and to develop models of integration which link curriculum, instruction, and assessment.

Thinking and Reasoning Skills

To become productive, responsible citizens and to achieve a sense of personal fulfillment, students must develop their ability to think and reason. It is no longer adequate for students to simply memorize information for recall. If graduates are to function effectively now and in the 21st century, they must be able to acquire and integrate new information, make judgments, apply information, and reflect on learning.

Research during the 1960's in cognitive psychology has led to the study of the processes that underlie learning. Although there are numerous models of intelligence and learning, the following guiding assumptions serve as the foundation for a thinking framework for North Carolina's public schools.

- All students can become better thinkers.
- Thinking is content dependent and influenced by the learner's prior knowledge of that content.
- The teaching of thinking should be deliberate and explicit with an emphasis on the transfer and application of thinking processes and skills.
- Thinking is improved when the learner takes control of his/her thinking processes and skills.
- Curriculum, instruction, and assessment should be aligned to enhance the teaching of thinking.
- Improving student thinking will require fundamental changes in the school culture, including lesson design, student assessment, classroom organization, and school governance.
- Over-emphasis on factual recall inhibits the development of thinking.
- Schools must model thoughtful behavior-decision making, problem solving and other thinking processes.
- Efforts to improve thinking within a school or school system should be guided by a conceptual framework and comprehensive plan.
- There is no single best program for the teaching of thinking.

Dimensions of Thinking

The Department of Public Instruction has adopted ***Dimensions of Thinking**** (1988) as the framework for the revised curriculum. The more recent work, ***Dimensions of Learning*** (1994), builds on the theory and research from ***Dimensions of Thinking*** and provides direction from a practitioner's perspective.

- Thinking Skills: These are specific cognitive operations--the building blocks of thinking. Examples are observing, recalling comparing, and ordering.
- Thinking Processes: These are complex sequences of thinking skills. Different processes involve variable sequences of thinking skills. They occur over time.
- Creative Thinking: This is the ability to form new combinations of ideas to fulfill needs. It is generative in nature and is usually judged by outputs.
- Critical Thinking: This is reasonable, reflective thinking--deciding what to believe. It is evaluative in nature and helps one not to be blinded by his/her own point of view.
- Metacognition: This is the awareness of one's own self as a thinker.

* Marzano, R.J. et.al. (1988). ***Dimensions of Thinking***, Alexandria, Va.: Association for Supervision and Curriculum.

Alignment of Curriculum and Assessment

The North Carolina ***Standard Course of Study*** sets content standards for what students should know and be able to do. The North Carolina ABCs Accountability Plan establishes performance standards which specify the level of proficiency a student must reach in order to have met specific content standards in specified subject areas. These performance standards are indicators of proficiency for those content areas that are tested.

Balanced Assessment Program

A balanced assessment program for North Carolina schools, teachers, and students serves multiple purposes. Classroom assessment informs instruction and monitors students' progress, while statewide testing focuses on accountability for student achievement and quality programs. Accountability measures are the means of checking broadly to determine what has been learned within the school. These assessments allow for corrections in instructional focus at a program level and are important indicators of the degree to which all students are learning the ***Standard Course of Study***. These data also help teachers determine students' progress from year to year. Results from accountability measures provide one source of information for parents and the public in a timely and accurate manner.

Ongoing classroom assessments are multifaceted and document students' progress over time. They are planned and administered by the classroom teacher and are focused on improving learning, readjusting instruction, and promoting quality, in-depth student work. These assessments make use of various strategies such as observations and open-ended questions and resources such as instructional management systems (test item banks) and portfolios. They encourage the observation of processes and the collection of student products. These assessments inform instructional planning and student, teacher, and parent conferences where individual student progress and future goals are discussed.

The North Carolina Department of Public Instruction believes that a balanced assessment program supports implementation of the ***Standard Course of Study***. Balanced assessment includes testing for accountability purposes and the continual development of quality classroom assessment as vehicles to prepare students to master high content and performance standards. The strategies most likely to result in long-term growth and learning of high quality will result from effective use of classroom assessments as an integral part of instruction. Additionally, strong classroom assessment engages students in self-assessment and greater ownership for their own learning. Quality classroom assessment is essential to the goals of high student achievement and the continuous improvement of schools.

Learning Targets

A strong model for teaching and learning includes classroom assessment as an integral part of a balanced assessment program. In an instruction-assessment cycle *assessment methods* are tied to *learning targets* and then to *decisions* about instruction. (See Figure 1 on page xiv.) In the initial part of the cycle, learning targets (goals) are clarified and students know in advance what they are expected to learn. Teachers use their in-depth understanding of the curriculum to identify the most important learning goals and establish priorities for instruction in order to build on students' prior understandings. They consider multiple targets – factual information, concepts, processes, reasoning, applications, and attitudes. They establish high expectations for all students for all important learning targets. Most importantly, they are able to clarify for themselves and their students what those targets are and what mastery of them will look like.

Assessment Methods

Since the primary users of classroom assessment are teachers and students, the most important purpose is to direct and inform student learning. Teachers and students need multiple evidences about each student's understandings and performances to diagnose, monitor progress, evaluate achievement, and plan for future instruction. Teachers use a variety of assessment methods, both formal and informal, to gather evidence of student learning. They match the type of assessment method to the learning target they want to measure and use stategies that ask students to demonstrate their thinking and reasoning.

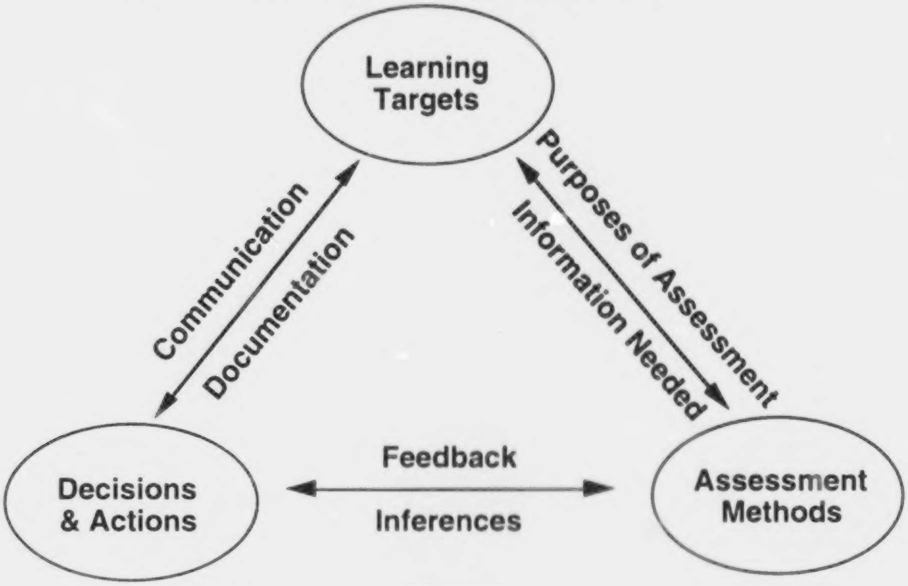
Through an ongoing process teachers may use classroom activities both to instruct and assess at the same time. What is important is that evidence of student learning is gathered with a variety of assessment methods, in multiple contexts, and over an extended period of time.

Decisions & Actions

As they gather the evidence about students' learning through classroom assessment, teachers make sense of assessment information. They ask themselves reflective questions. For example, they may ask:

- What do these errors actually tell me about the students' thinking and understanding?
- Do I have sufficient evidence to know how well the students really understand?
- How well can I generalize about how much students know and can do?
- What other evidence may I need?

Reflection helps teachers decide what information and feedback can be extracted from student assessment data and what inferences and interpretations can be made about student learning.


Learning Targets
Purposes of Assessment
Information Needed
Communication
Documentation
Decisions & Actions
Feedback
Inferences
Assessment Methods

Assessment Cycle: A Model for Teaching and Learning

Figure 1

Communication Documentation In the last part of the model, teachers document, act on, and communicate information from the assessments. By taking action based upon what the students understand and can do, teachers are likely to be more effective in their decisions. They may decide to reteach key concepts, to move to the next unit of instruction, to regroup students for further instruction, or to allow more practice and application time. Documentation of student learning occurs throughout the teaching and learning model and will include diverse formats: checklists, anecdotal records, observations, grades, portfolios. Communication can provide clear, precise, useable feedback to students, parents, administrators, or other interested adults. This communication can be formal (a report card or scheduled conference) or informal (a telephone conversation, note, or conversation). The cycle of teaching and learning will repeat again and again throughout the year, with the teacher's identifying and clarifying the next learning targets.

Both classroom assessment and statewide testing focus on the learning targets that are described in the ***Standard Course of Study***, albeit for different purposes. Future changes in the scope and form of statewide assessments will therefore be based on the ***Standard Course of Study***.

Programs for Children With Special Needs

The Purpose of Programs for Exceptional Children

The main purpose of exceptional children's programs is to ensure that students with disabilities develop mentally, physically and emotionally to the fullest extent possible through an appropriate, individualized education in the least restrictive environment.

Children with special needs are students who because of permanent or temporary mental, physical, or emotional disabilities need special education and are unable to have all their educational needs met in a regular class without special education or related services. Children with special needs include those who are autistic, hearing impaired (deaf and hard of hearing), mentally handicapped (educable, trainable, or severely/profoundly), multi-handicapped, orthopedically impaired, other health impaired, pregnant, behaviorally-emotionally handicapped, specific learning disabled, speech-language impaired, traumatic brain injured, and visually impaired (blind or partially sighted). See Section .1501 or Procedures Governing Programs and Services for Children with Special Needs for definitions of these classifications.

Programs and services for children with special needs may be classified as both instructional programs and instructional support services, depending on the educational need of an individual student.

Content Sequence

Curricula for most children with special needs follow the curricula for students in general education. Emphasis must be given to instruction in English language arts, arts education, social studies, healthful living, mathematics, science, career and vocational education, depending on the needs of the individual student. Attention must focus upon cognitive, affective, motor and vocational development within the curricular areas. The Individualized Education Program for students with disabilities is based on a comprehensive assessment, and states in writing the special education offerings to be provided to each student with a disability.

Learning Outcomes

Learning outcomes - knowledge, skills, concepts, understandings, and attitudes - for students with disabilities will differ from student to student. For many exceptional students, the same learning outcomes developed for students in general education will be appropriate. Some exceptional students will meet the learning outcomes at a different time and in a different manner than students in general education. Some students with severely limiting disabilities might not meet these outcomes in general education and will need a totally different curriculum.

Curriculum Adaptation

The purpose for adapting or changing curricula and teaching and learning strategies for students with disabilities is to help them achieve at their highest level, and to prepare them to function as independently as possible. Completion of school experience by students with disabilities is determined by meeting the requirements for graduation or by attaining the goals in the Individualized Education Program, or both. To graduate with a diploma, an exceptional student must earn the State mandated units of credit based on successful completion of course work, and acceptable scores on tests adopted by the State. Exceptional students who do not meet the State and local requirements for a diploma, but meet other requirements for graduation, will be eligible to participate in graduation exercises and receive a certificate of achievement.

Although course requirements are the same for exceptional students and non-exceptional students, the instruction must be tailored to meet each student's individual needs. Instruction is based on the curricula needs (academic, affective, motor, and vocational) of each student with a disability. Instruction varies from student to student so curricula may vary also. The key to all education for students with disabilities is the Individualized Education Plan.

Revised 4/15/98

State of North Carolina Graduation Requirements

4 units in English

3 units in mathematics, one of which must be Algebra I

3 units in social studies, one of which must be *Government & Economics, one in United States History and one in world studies

3 units in science, one of which must be biology, one physical science, and one in **earth/ environmental science

1 unit in health and physical education

6 units designated by the LEA, which may be undesignated electives or courses designated from the NC Standard Course of Study

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20 units

* As of March 13, 1997, the State Board of Education action requires students to take Economic, Legal and Political Systems (ELPS) in order to receive credit in government and economics. Exceptions are the following:

- Students who have already met the requirements of government and economics.
- Students registered for government and economics for either 1997 summer school or the 1997-1998 school year.
- Students who transfer from another state that have already met the requirement.

**As of March 5, 1998, the State Board of Education action requires freshman entering 2000-2001 to take an Earth Environmental science as the third science requirement.

NORTH CAROLINA
ACADEMIC SCHOLARS PROGRAM

History

In March, 1983, the State Board of Education approved the North Carolina Scholars Program to begin with the 1983-1984 school year. In March, 1990, the State Board of Education revised the program and redesignated it the North Carolina Academic Scholars Program. Students who complete the requirements for an academically challenging high school program will be named North Carolina Academic Scholars and receive special recognition.

Recognition

The students who qualify for this special recognition

- will be designated by the State Board of Education as North Carolina Academic Scholars.
- will receive a seal of recognition attached to their diplomas.
- may receive special recognition at graduation exercises and other community events.
- may be considered for scholarships from the local and state business/industrial community.
- may use this special recognition in applying to post-secondary institutions. (Candidates are identified by the end of grade 11 and their candidacy can be included in application forms and/or transcripts sent to these institutions.)

Student Planning

Most student should begin planning for the program before they enter grade 9 to ensure they get the most flexibility in their courses.

Program Requirements

To become North Carolina Academic Scholars, students must complete the Course of Study indicated below. It should be noted that students must have an overall four-year grade average of B or its equivalent as determined by the local board of education.

The program will consist of a single plan as outlined below:

Units	Program Area
4	English I, II, III, IV
3	Mathematics (Algebra I, Geometry, Algebra II or one unit of advanced mathematics for which Algebra II is a prerequisite – three (3) units must be taken in grades 9-12)
3	Science (Biology, Chemistry, Physics or one other advanced science in lieu of Physics)
3	Social Studies (Government/ Economics, U.S. History, and one world studies course)
2	Foreign Languages (two levels of the same language)
1	Health/Physical Education
2	Additional units selected from among English, Mathematics, Science, Social Studies or Foreign Language courses
4	Electives
22	

Please note that the designated number of units per subject area must be taken in grades 9-12.

NORTH CAROLINA
POSTSECONDARY EDUCATION REQUIREMENTS*

Content Area	**College Tech Prep Requirements****	**College Prep (University of NC System 4-Year College Requirements **)**
English	4 Courses I, II, III, IV	4 Courses I, II, III, IV
Mathematics	3 Courses Algebra I, Geometry, Algebra II or Algebra I, Technical Math I & II	3 Courses Algebra I, Geometry, Algebra II *(recommended one course unit in 12th grade)*
Science	3 Courses a physical science course (related to career pathway [CP]) Biology other science course related to CP	3 Courses a physical science course a life or biological course *(Biology)* at least one laboratory course
Social Studies	3 Courses *Government/Economics (ELPS)* *US History* *World Studies*	2 Courses *(3 for NC Diploma)* US History One elective *(ELPS or World Studies)*
Foreign Language	Not required	2 Courses Recommended at least two (2) course units in one foreign language with one course unit taken in 12th grade
Computer Skills	A specific course is not required but students must demonstrate proficiency in keyboarding and computers	*A specific course is not required but students must demonstrate proficiency through state testing (starting with the graduation class of 2001)*
Health and Physical Ed.	*1 Course* *Health/Physical Education*	*1 Course* *Health/Physical Education*
Career/Technical	4 Units of Credits Select courses appropriate for career pathway or major	Not required
Arts Ed. (Visual Arts, Dance, Music & Theater Arts)	Not required (local decision*)	Not required (local decision*)
Electives	*Elective Courses* *Additional electives must be included to meet local graduation requirements*	*Elective Courses* *Additional electives must be included to meet local graduation requirements*
Total	Depends on Local Requirements	Depends on Local Requirements

* LEAs may require additional courses for graduation.

** A high school diploma or its equivalent is required as well.

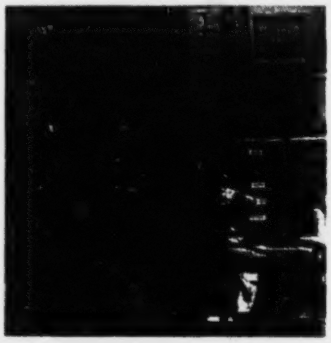
Note: Italics indicate items necessary to meet NC graduation requirements but not specific requirements to the course of study.

COURSE OF STUDY

Standard Course of Study and Grade Level Competencies

K-12

Public Schools of North Carolina
Department of Public Instruction



ARTS EDUCATION

ndard Course of Study and Grade Level Competencies

K-12

Public Schools of North Carolina
Department of Public Instruction

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ARTS EDUCATION K-12

INTRODUCTION

Development Arts education is a collective term that denotes learning and instruction in **four separately distinctive subject areas: dance, music, theatre arts and visual arts**. Therefore, the Arts Education Standard Course of Study Frameworks and the Teacher Handbook - Arts Education K-12 were developed by four committees representing each of these areas. Once all documents were in draft form they were sent to selected representative teachers across the state, school and central office administrators, arts departments in higher education institutions, other area consultants and administrators in the Department of Public Instruction, other state agencies, state arts education organizations, and individuals who expressed interest in providing input into the finished product. The resulting feedback was carefully considered by the committees and changes were made where they were deemed beneficial. Every effort was made to address current education and curriculum issues.

Purpose The purpose of these frameworks and the handbook is to suggest what is comprised in the study of the four K-12 arts programs. They have been generated to help teachers and curriculum specialists in each school system develop classes or courses and instructional strategies using them as a foundation.

New Features Both the arts education frameworks and handbook are significantly different from prior versions in the following regards:

- There is a strong emphasis on communicating, reading, writing and, where plausible, math throughout each arts curriculum.

- Integration of learning both among the four arts areas and among other subject areas is stressed.

- Since the ability to do critical and creative thinking as well as complex problem solving and to use intuition are inherent parts of the arts process, importance has been placed upon the development of these abilities throughout the entire study in each arts area.

- There is a greater focus on knowing about, understanding and appreciating a variety of world cultures and historic periods.

- The ability to use knowledge, skills and processes learned in the arts and apply them to other disciplines and to life beyond school is reinforced.

- Where appropriate in some arts areas, concepts such as conflict resolution, teamwork, sensibility to and tolerance of others and their views, heightened perceptual awareness, synthesis of ideas to arrive at a logical deduction, and work force preparedness are dealt with as integral aspects of the study.

Basis

The revisions are based on the current National Standards for Arts Education developed by the Consortium of National Arts Education Associations. These standards describe what every young American should know and be able to do in the arts. The standards are the basis upon which a national assessment is being developed as part of the National Assessment of Educational Progress. In both the revised documents, the goal statements for each arts area are directly correlated with the national standards. Where applicable, the standards are noted by number in parenthesis under each goal statement throughout the document. This will enable users of this revision to see the relationship between it and the national standards document. The National Standards for Arts Education may be purchased from MENC Publications Sales, 1806 Robert Fulton Drive, Reston, Virginia, 22091.

Format

The frameworks consist of goals in each arts area developed for the **K-2, 3-5, 6-8 and 9-12 grade levels** along with suggested **objectives**.

In the handbook, the same goals and objectives are further developed so that conceptual, sequential and student development are readily apparent for each goal. The goals and objectives are expanded through the addition of **focuses** for each objective with accompanying **implications for learning and teaching** in the adjacent column. No portion of the handbook is written in courses, but rather contains suggested concepts which may be assimilated into classes or courses designed by each school or school system and taught at the various grade levels. Significant effort has been made to ensure enough useful information has been provided but, at the same time, to allow for flexibility with interpretations, choices and methodologies by school personnel.

Intent

The intent of the National Standards for Arts Education along with the frameworks and handbook is that a comprehensive understanding of one or more of the arts be accomplished by each student throughout the K-12 program. These documents describe a thirteen-year program in each area which would result from effective instruction during each year from Kindergarten to twelfth grade. The fact is that few students are able to have such a consistent and comprehensive experience in any area. It is more likely that individuals may be at different points along this continuum. The documents for each arts area provide the means to determine where students are and what studies they may need to pursue to achieve an appropriate and quality arts education experience at any given time throughout their tenure in public school.

Philosophy

The arts have been part of life from the very beginning. They have described, defined, and deepened human experience. All people have an abiding need for meaning--to connect time and space, experience and event, body and spirit, intellect and emotion. We create art to make these connections, to express the inexpressible. A society without the arts is unimaginable.

The arts connect each new generation to those who have gone before, equipping the newcomers in their own pursuit of the abiding questions: Who am I? What must I do? Where am I going?

Simultaneously, the arts initiate change, challenging old perspectives from fresh angles of vision, or offering original interpretations of familiar ideas. The arts disciplines each provide their own unique ways of thinking. At another level, the arts are society's gift to itself, linking hope to memory, inspiring courage, enriching our celebrations, and making our tragedies bearable. The arts are a source of enjoyment and delight, providing the "Aha!" of discovery when we see ourselves in a new way, grasp a deeper insight, or find our imaginations refreshed. Every generation has been preoccupied with the arts because they bring us face to face with ourselves, and with what we sense lies beyond.

The arts are deeply embedded in our daily life, often so deeply or subtly that we are unaware of their presence. The office manager who has never studied painting may nevertheless select a living-room picture with great care. A couple who would never think of taking in a ballet are nonetheless avid square dancers. The arts are everywhere in our lives, adding depth and dimension to the environment we live in, shaping our experience daily. The arts are a powerful economic force as well, from fashion, to the creativity and design that go into every manufactured product, to architecture, to the performance and entertainment arts that have grown into multibillion dollar industries. We cannot escape the arts--nor would we want to.

For all these reasons and many more, **the arts have been an inseparable part of the human journey**; indeed, we depend on the arts to carry us toward the fullness of our humanity. We value them for themselves, and because we do, we believe knowing and practicing them is fundamental to the healthy development of our children's minds and spirits. That is why, in any civilization--ours included--the arts are inseparable from the very meaning of the term "education." We know from long experience that *no one can claim to be truly educated who lacks basic knowledge and skills in the arts.*

If our civilization is to be both dynamic and nurturing, its success will ultimately depend on how well we develop the capacities of our children, not only to earn a living in our complex world, but to live a life rich in meaning. To achieve this quality of life requires a vital connection to the arts, which like any subject, demand discipline and study.

This document identifies what our children must *know* and be able to *do* as a result of a comprehensive arts education. A mere nodding acquaintance with the arts is not enough to sustain our children's interest or involvement in them. The arts will help them discover who they are, and what is even more important, who they can become.

Benefits

Arts education benefits both student and society. Involving the "whole child" in the arts gradually teaches literacy while developing intuition, sensitivity, reasoning, imagination, and dexterity. This process requires not merely an active mind but a trained one. Arts education helps students perceive and think in new ways. The arts also help provide and extend meaning. Because so much of a child's education in the early years is devoted to acquiring the skills of language and mathematics, children gradually learn, unconsciously, that the "normal" way to think is linear and sequential, that the pathway to understanding moves from beginning to end, from cause to effect. In this early mode, students trust those symbol systems (words, numbers, and abstract concepts) that separate the person from their experiences.

But **the arts teach a different lesson by often starting in a different place.** The arts cultivate the senses which trust the unmediated flash of insight as a legitimate source of knowledge. The arts connect person and experience directly, building bridges between verbal and nonverbal, logic and emotion--the better to gain an understanding of the whole. Both approaches are powerful; both are necessary. To deny students either is to disable them.

An education in the arts benefits *society* because students of the arts disciplines gain powerful tools for:

- **understanding human experiences**, both past and present;

- **teamwork and collaboration**;

- **making decisions** creatively when no prescribed answers exist;

- **learning to adapt to and respect** others' (diverse) ways of thinking, working, and expressing themselves;

- **learning problem recognition and problem solving,** involving expressive, analytical, and developmental tools to every human situation (this is why we speak, for example, of the "art" of teaching or the "art" of politics);

- **understanding the influence of the arts and their power** to create and reflect cultures, the impact of design on our daily life, and in the interdependence of work in the arts with the broader worlds of ideas and action;

- **developing the essential senses** of sight, hearing, smell, taste, touch, and kinesthetics as intellectual, emotional, physical, creative, and expressive acts;

- **analyzing nonverbal communication and making informed judgments** about cultural products and issues; and

- **communicating effectively.**

In a world inundated with contradictory messages and meanings, arts education helps young people explore, understand, accept, and use ambiguity and subjectivity. In art as in life, there is often no clear or "right" answer to questions that are nonetheless worth pursuing ("Should the trees in this painting be a little darker shade of green?"). At the same time, arts in the classroom bring excitement and exhilaration to the learning process. Study and competence reinforce each other; students become increasingly interested in learning, add new dimensions to what they already know, and want to learn even more. The joy of learning becomes real, tangible, powerful!

Value of the Arts

Perhaps most important, the arts have *intrinsic* value. They are worth learning for their own sake, providing benefits not available through any other means. To read Schiller's poem "Ode to Joy," for example, is to know one kind of beauty, yet to hear it sung by a great chorus as the majestic conclusion to Beethoven's Ninth Symphony is to experience beauty of an entirely different kind, an experience that for many is sublime. Because these deeply felt experiences transcend our daily reality, there is no substitute for the arts, which provide bridges to things we can scarcely describe, but respond to deeply. In the simplest terms, no education is complete without them.

The arts also contribute to education beyond their intrinsic value. Because each arts discipline appeals to different senses and expresses itself through different media, each adds a special richness to the learning environment. An education in the arts helps students learn to identify, appreciate, and participate in the traditional art forms of their own communities. As students imagine, create, and reflect, they are developing both the verbal and nonverbal abilities necessary for school progress. At the same time, the intellectual demands of the arts help students develop problem-solving abilities and such critical thinking skills as analyzing, synthesizing, and evaluating. Numerous studies point toward a consistent and positive correlation between a substantive education in the arts and student achievement in other subjects and on standardized tests. A comprehensive, articulated arts education program also engages students in a process that helps them develop the self-esteem, self-discipline, cooperation, and self-motivation necessary for success in life.

Connections Between the Arts, Students and the World

If arts education is to serve its proper function, each student must develop an understanding of such questions as these: What are the arts? How do artists work and what tools do they use? How do traditional, popular, and classical art forms influence one another? Why are the arts important to me and my society? As students seek the answers to these questions, they develop an understanding of the essence of each arts discipline, and of the knowledge and skills that enliven it. This does not imply that every student will acquire a common set of artistic values. Ultimately, students are responsible for their own values.

The affirmations below draw significant connections among the arts, the lives of students, and the world at large:

- The arts have both intrinsic and instrumental value; that is, they have worth in and of themselves and can be used to achieve a multitude of purposes (e.g., to present issues and ideas, to teach or persuade, to entertain, to design, plan, and beautify).

- The arts play a valued role in creating cultures and building civilizations. Although each arts discipline makes its unique contributions to culture, society, and the lives of individuals, their connections to each other enable the arts disciplines to produce more than any of them could produce alone.

- The arts are a way of knowing. Students grow in their ability to comprehend their world when they learn the arts. As they create dances, music, theatrical productions, and visual artworks, they learn how to express themselves and how to communicate with others.

- The arts have value and significance for daily life. They provide personal fulfillment, whether in vocational settings, avocational pursuits, or leisure.

- Lifelong participation in the arts is a valuable part of a life fully lived and should be cultivated.

- Appreciating the arts means understanding the interactions among the various professions and roles involved in creating, performing, studying, teaching, presenting, and supporting the arts, and in appreciating their interdependent nature.

- Awakening to folk arts and their influence on other arts deepens respect for one's own and for others' communities.

- Openness, respect for work, and contemplation when participating in the arts as an observer or audience member are personal attitudes that enhance enjoyment and ought to be developed.

- The arts enhance and sharpen one's abilities to inquire and express.

- Because the arts offer the continuing challenge of situations in which there is no standard or approved answer, those who study the arts become acquainted with many perspectives on the meaning of "value."

- The modes of thinking and methods of the arts disciplines can be used to illuminate situations in other disciplines that require creative solutions.

- Attributes such as self-discipline, the collaborative spirit, and perseverance, which are so necessary to the arts, can transfer to the rest of life.

- The arts provide forms of nonverbal communication that can strengthen the presentation of ideas and emotions.

- Each person has a responsibility to advance civilization. The arts encourage taking this responsibility and provide skills and perspectives for doing so.

As students work at meeting artistic challenges, they are preparing to make their own contributions to the nation's culture. The more students live up to these high expectations, the more empowered our citizenry will become. Helping students grow in the arts is one of the best possible investments in the future of our country and civilization.

Access

All students deserve access to the rich education and understanding that the arts provide, regardless of their background, talents, or disabilities. In an increasingly technological environment overloaded with sensory data, the ability to perceive, interpret, understand, and evaluate such stimuli is critical. The arts help all students to develop multiple capabilities for understanding and deciphering an image- and symbol-laden world. Thus, the arts should be an integral part of the general education for all students. In particular, students with disabilities, who are often excluded from arts programs, can derive great benefit from them--and for the same reasons that studying the arts benefits students who are not disabled. As many teachers can testify, the arts can be a powerful vehicle--sometimes the best vehicle--for reaching, motivating, and teaching a given student. At the same time, there is a continuing need to make sure that all students have access to the learning resources and opportunities they need to succeed. Thus, as in any area of the curriculum, providing a sound education in the arts will depend in great measure on creating access to opportunities and resources.

In this context, the idea that all education in the arts is just for "the talented," and not for "regular students" or those with disabilities, can be a stumbling block. The argument that relegates the arts to the realm of passive experience for the majority, or that says a lack of "real talent" disqualifies most people from learning to draw, play an instrument, dance, or act, is quite simply *wrong*. Clearly, students have different aptitudes and abilities in the arts, but differences are not disqualifications. An analogy may be helpful. We expect mathematical competence of all students because a knowledge of mathematics is essential to shaping and advancing our society, economy, and civilization. Yet no one ever advances the proposition that only those who are mathematically "talented" enough to earn a living as mathematicians should study long division or algebra. Neither, then, should talent be a factor in determining the place or value of the arts in an individual's basic education.

Critical Elements

Comprehensive arts education programs can make a difference because they speak powerfully to two fundamental issues that pervade all of education--quality and accountability. They help ensure that the study of the arts is disciplined and well-focused, and that arts instruction has a point of reference for assessing its results.

The following concepts are critical to consider when implementing an arts education program.

- Arts education is not a hit-or-miss effort but a **sequenced, comprehensive learning across four arts disciplines**, each including its own skills, knowledge, and techniques. These offer the student a means of communication and modes of thought and action. Each discipline also provides rich and complex points of view on the world and human experience. Each offers analytical and theoretical perspectives, a distinct history, varied interpretations, as well as innumerable connections to all human activity.

All basic subjects, including the arts, require more than mere "exposure." They need **focused time for sequential study, practice, and reflection**. While valuable, a once-a-month visit from an arts specialist, visits to or from professional artists, or arts courses for the specially motivated do not qualify as basic or adequate arts instruction. They certainly cannot prepare all students in a comprehensive way. When children move beyond the "exposure" level toward proficiency in an arts discipline, the basic processes of creating, performing, producing, thinking, perceiving, and responding in one context are utilized in other curriculum areas. The child who learns reading through one or more areas of the arts will also improve in reading in other subject areas. Just so, the child who learns to see with an artist's eye, hear with the musician's ear, dramatize the playwright's vision, or tell a story with the body's movement has acquired a tool that can enrich and enliven all learning, whether in the other arts, other subject areas or beyond.

- Instruction in the arts **must occur through a hands-on orientation** (i.e., students should be continually involved in the work, practice, and study required for effective and creative engagement in all four arts disciplines). The arts encompass an expressive, therapeutic approach to learning whereby psychological/physiological needs of the whole child are met. Content and process are emphasized for each child since he or she is viewed as a unique individual.

- Students should learn about the diverse cultural and historical heritages of the arts. Our culture is a rich mix of people and perspectives, drawn from many cultures, traditions, and backgrounds. That diversity provides students with a distinctive learning advantage: they can juxtapose unique elements of their individual cultural traditions with elements that have been embraced, incorporated, and transformed into a shared culture. In the process, they **learn that diverse heritages are accessible to all**. Our cultural diversity is a vast resource for arts education, and should be used to help students understand themselves and others. The visual, traditional, and performing arts provide a variety of lenses for examining the cultures and artistic contributions of our nation and others around the world.

Significance to Education

Students should learn that each **art form has its own characteristics and makes its distinctive contributions**, that each has its own history and heroes. Students need to learn the profound connections that bind the arts to one another and to other core curriculum areas, as well as the connections between particular artistic styles and the historical development of the worlds cultures. Students also need to understand that **art is a powerful force in the everyday life of people** around the world, who design and make many of the objects they use and enjoy.

It is therefore essential that those who construct **arts curricula attend to issues of ethnicity, national custom, tradition, and gender, as well as to the artistic elements and aesthetic responses that transcend and universalize such particulars.** The polyrhythmic choreography of Native American dancing, the incomparable vocal artistry of a Jessye Norman, and the intricate calligraphy of Japanese and Arabic artists are, after all, more than simply cultural artifacts; they are part of the world's treasure house of expression and understanding. As such, they belong to every human being and should be used to develop basic knowledge and skills in the various arts disciplines.

- **Arts education should promote interdisciplinary study; and integration among and across the arts and other disciplines.** Those connections are of two kinds and should not be confused.

Correlations, the first kind, show specific similarities or differences. A simple example is the correlation between music and mathematics. Clearly evident in the structure of both are such elements as counting, intervals, and consistent numerical values. More complex examples could involve studies based on such areas as aesthetics, sociology, or historic periods, in which texts, interpretations, and analyses about two or more art forms are compared and contrasted.

The other kind, ***Integration, is*** different from correlation. Instead of placing different subjects side by side to compare or contrast them, integration uses the resources of two or more disciplines in ways that are mutually reinforcing, often demonstrating an underlying unity. A simple example of integration within the arts is using combinations of visual effects and words to create a dramatic mood. At a more complex level involving the study of history, other examples of integration might be how American theatre in the period 1900-1975 reflected shifts in the American social consciousness, or how the sacred and secular music of African-Americans contributed to the civil rights movement.

Because forging these kinds of connections is one of the things the arts do best, they can and should be **taught in ways that connect them to each other and to other subjects.** Significantly, building connections in this way gives students the chance to understand wholes, parts, and their relationships. The high school student of world history who has learned something about the visual arts of Japan will understand the politics of the Tokugawa shoguns far better than a classmate who knows nothing of how the art of Japan reflects that country's core values. But one point is basic. Correlation, integration, and similar approaches to learning are first of all a matter of knowledge and competence within each of the arts disciplines, which must be maintained in their full integrity.

- Technology is a force not only in the economy but in the arts as well. The use of **technology in arts instruction is meaningful only to the degree that it contributes to competence,** and that contribution comes through instruction and study. New technologies make it possible to try out a host of possibilities and solutions, and obtain information. Success should be measured by how well students achieve artistic and intellectual objectives, not alone by how adept they are in using a given arts technology. The use of technology should increase their ability to synthesize, integrate, and construct new meanings from a wealth of new resources and information so that they understand the relationships among technical means, artistic technique, and artistic goals.

- The development of the **problem-recognition/problem-solving and higher-order thinking skills** necessary for success in life and work should be taken seriously in arts education.

- A comprehensive arts education **program should provide a foundation for educational assessment on a student-by-student basis**. One of the substantial advantages offered by a comprehensive arts education program is that it combats the uninformed idea that the arts are an "academically soft" area of study. People unfamiliar with the arts often mistakenly believe that excellence and quality are merely matters of opinion ("I know what I like"), and that one opinion is as good as another.

The arts are cognitive, they have "academic" standing. They say there is such a thing as achievement, that knowledge and skills matter, and that mere willing participation is not the same thing as education. They affirm that discipline and rigor are the road to achievement. And they state emphatically that all these things can in some way be measured--if not always on a numerical scale, then by informed critical judgment. Although certain aspects of learning in the arts can be measured adequately by traditional paper-and-pencil techniques or demonstrations, many skills and abilities can be properly assessed only by using subtle, complex, and nuanced methods and criteria that require a sophisticated understanding. Assessment measures should incorporate these subtleties, while at the same time making use of a broad range of performance tasks.

What Students Should Know and Be Able to Do

There are many routes to competence in the arts disciplines. Students may work in different arts at different times. Their study may take a variety of approaches. Their abilities may develop at different rates. Competence means the ability to use an array of knowledge and skills. Terms often used to describe these include creation, performance, production, history, culture, perception, analysis, criticism, aesthetics, technology, and appreciation. Competence demands capabilities with these elements and understanding of their interdependence; implied also is the ability to combine the content, perspectives, and techniques associated with the various elements to achieve specific artistic and analytical goals. Students work toward comprehensive competence from the very beginning, preparing in the lower grades for deeper and more rigorous work each succeeding year. As a result, the experience of the arts matures through learning and the pride of accomplishment.

Students should know and be able to do the following by the time they have completed secondary school:

- **They should be able to communicate at a basic level in the four arts disciplines** -- dance, music, theatre arts, and visual arts. This includes knowledge and skills in the use of the basic vocabularies, materials, tools, techniques, and intellectual methods of each arts discipline.

- **They should be able to communicate proficiently in at least one art form** including the ability to define and solve artistic problems with insight, reason, and technical proficiency.

- **They should be able to develop and present basic analyses of works of art** from structural, historical, and cultural perspectives, and from combinations of those perspectives. This includes the ability to understand and evaluate work in the various arts disciplines.

- **They should have an informed acquaintance with exemplary works of art from a variety of cultures and historical periods,** and a basic understanding of historical development in the arts disciplines, across the arts as a whole, and within cultures.

- **They should be able to relate various types of arts knowledge and skills within and across the arts disciplines.** This includes mixing and matching competencies and understandings in art-making, history and culture, and analysis in any arts-related project.

From developing these capabilities, students arrive at their own knowledge, beliefs, and values for making personal and artistic decisions. In other terms, they can arrive at a broad-based, well-grounded understanding of the nature, value, and meaning of the arts as a part of their own humanity. The following diagram suggests a course of study for arts education.

SUGGESTED COURSE OF STUDY

K-2	3-5	6-8	9-12
Children's Dance	Children's Dance	Dance Education	Dance I Dance II
General Music	General Music	General Music	General Music (1 elective course) Instrumental Music Winds Percussion Strings Vocal Music
Creative Drama	Creative Drama	Creative Drama	Theatre Arts I Theatre Arts II Technical Theatre I
Visual Arts (Drawing, Painting, Printmaking, Sculpture, Fine Crafts)	Visual Arts (Drawing, Painting, Printmaking, Sculpture, Fine Crafts)	Visual Arts (Drawing, Painting, Printmaking, Sculpture, Fine Crafts)	Visual Arts I Visual Arts II Visual Arts III

Relationship Between the Teacher Handbook and National Standards

Every effort has been made to correlate the National Standards for Arts Education with the Teacher Handbook - Arts Education K-12. In most cases the curriculum goals have direct correlation with the national standards. The handbook is correlated with the content and processes specific to each of the arts and the National Assessment of Educational Progress for arts education. The matrix at the end of this section visually shows the relationship of the four arts areas, the assessment areas of creating, performing, and responding, the content aspects of knowledge and skills, and the format used for the Teacher Handbook - Arts Education K-12.

Content, which may be found under the Focus section of the handbook, is comprised of two major components of learning expected of students who participate in the study of the arts. First is **knowledge** and understanding about the arts to include the personal, historical, cultural and social contexts for works. Second is the area of perceptual, technical, expressive, and intellectual/reflective **skills**. Both these components are found in each arts discipline.

The **processes** found under the Implications for Learning and Teaching section of the handbook are comprised of three aspects: **creating, performing, and responding**. The first, *creating*, refers to generating original art. This may include, but should not be limited to, the expression of a student's unique and personal ideas, feelings, and responses. The second, *performing* and/or interpreting means performing an existing work, a process that calls upon the interpretive or re-creative skills of the student. The third, *responding*, varies from that of an audience member to the interactive response,between a student and a particular medium. The response is usually a combination of affective, cognitive, and physical behavior. Responding involves a level of perceptual or observational skill; a description, analysis or interpretation on the part of the respondent; and sometimes a judgment or evaluation based on some criteria which may be self-constructed or commonly held by a group or culture. Responding calls on higher order thinking and is central to the creative process. Responses may be oral and written or conveyed non-verbally or in the art forms themselves.

As shown in the diagram, "performing" an existing work does not apply to the visual arts, where reproducing an artist's work is not central. Visual arts places a high value on first-hand, creative expression. Theatre sees creating and performing as a combined act often as a collaborative process among many people. For dance and music, the processes of creation, performance, and critical evaluation of work, while all present, often merge.

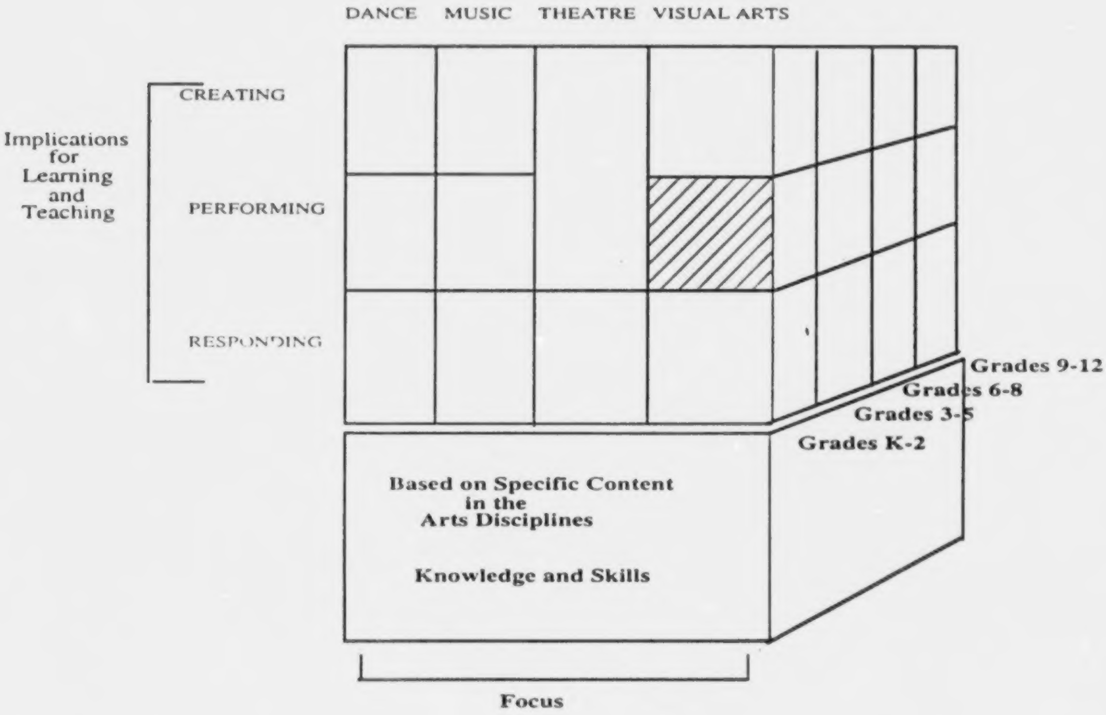
The relationship between content and processes exists at each grade level and becomes more sophisticated as students progress from kindergarten to the twelfth grade. By emphasizing this approach throughout the teacher handbook, the new handbook and frameworks will be compatible with both the standards and assessment being used nationally.

NATIONAL STANDARDS FOR ARTS EDUCATION

AND

TEACHER HANDBOOK - ARTS EDUCATION

MATRIX


DANCE
MUSIC
THEATRE
VISUAL ARTS
Implications for Learning and Teaching
CREATING
PERFORMING
RESPONDING
Grades 9-12
Grades 6-8
Grades 3-5
Grades K-2
Based on Specific Content in the Arts Disciplines
Knowledge and Skills
Focus

BEST COPY AVAILABLE

DANCE K-12

PURPOSE AND OVERVIEW

Purpose

Dance in the public schools:

- provides students with a kinesthetic (bodily) way of experiencing, perceiving, understanding, learning, and communicating.
- develops higher order thinking through perceiving, creating, performing, analyzing, and evaluating.
- develops and applies reading, writing, and mathematics skills.
- is a sequential, discipline-based offering.
- challenges the intellect and creativity of each student.
- instills concentrated focus and a disciplined approach to lifelong learning.
- integrates with all framework content areas.
- develops respect for diverse ways of thinking, working, and expressing ideas.
- nurtures problem-recognition and problem-solving through considering, assessing, and adopting appropriate solutions.
- provides opportunities for social development and collaboration with others.
- fosters a diverse cultural and historical perspective.
- promotes a healthy body and an active mind for learning.
- encourages aesthetic discovery and growth.
- provides knowledge of vocational and avocational opportunities.

Basis

Movement is one of the first ways children learn and communicate. Dance is a language of movement that provides developmentally-appropriate opportunities to draw upon this natural way of learning. Dance helps students develop self discipline and focus as they explore movement concepts of space, time, and energy. These concepts are basic to the discovery of the body's movement potential. Throughout the program, students are encouraged to be imaginative and create dances of their own. The process of creating dance engages students in activities that facilitate the understanding of sequence, problem-solving, cooperation, and critical thinking skills.

Dance develops an understanding of the diverse ideas, beliefs, cultures, attitudes and feelings of humankind throughout time as communicated through movement. The program is based primarily on the principles of modern dance and embraces a variety of styles and creative approaches. It fosters the development of imagination, aesthetic perception, and higher order thinking skills. Dance is a vehicle for helping children understand and become engaged in the creative process and its relationship to all areas of learning. Teaching methodologies emphasize kinesthetic learning and allow each student to become knowledgeable about dance through personal and active experience as a dancer, choreographer and audience member.

Grades K-2 In Grades K-2, dance draws upon children's natural enthusiasm for movement. Through the introduction of the concepts of space, time and energy, students become aware of a variety of movement possibilities. It encourages exploration of multiple solutions to problems. Students become aware that dance is a unique way of knowing and that movement is a language which communicates ideas, thoughts and feelings. Students are encouraged to share, analyze, and evaluate their work.

Grades 3-5 Children progress with more refined use of space, time, and energy in Grades 3-5. Greater emphasis is placed upon problem-solving and working cooperatively with others in the dance process. Lessons may have a thematic focus based on content from other subject areas and/or related to the child's interest and developmental level. Students continue to create, perform, analyze, and evaluate their work and begin to understand dance as an art form.

Grades 6-8 In Grades 6-8, dance experiences are based upon the creative process, kinesthetic learning, and the connection to concepts studied in all framework areas. This study emphasizes the training and care of the body as an instrument for dance and for acquisition of technical skills for involvement as a choreographer, dancer, and audience member. Aesthetic development increases as students are challenged through individual and group choreographic projects. Understanding of the social, cultural, and historical continuum and an appreciation for the world of dance is developed. Appropriate technology is introduced and vocational and avocational possibilities of dance are explored.

Grades 9-12 Dance at Grades 9-12 continues to be a sequential and discipline based program that places emphasis on aesthetic understandings and training the body as an instrument of communication and expression. Students are encouraged to freely explore the problem-recognition and problem-solving processes through the technical skills acquired from a movement-based approach to learning. They are encouraged to express ideas, thoughts, and perceptions in their own choreographic works. Emphasis is given to personal perception, observation, and interaction in order to foster the growth and development of the creative process. Students develop skills in making aesthetic judgments based upon personal experiences in order to evaluate and critique their own work.

Studies at this level continue to focus upon history, theory and philosophy of dance, dance appreciation, and an understanding of the arts as a measure of human development throughout civilization.

The K-12 dance framework is a comprehensive program encompassing a broad field of study. Course offerings should be developed to carry out the various elements of this framework.

PROGRAM FRAMEWORK

Goal 1: The student will identify and demonstrate elements and skills in dance.
(National Standard 1)

K-2 1.1 Develop kinesthetic awareness.
1.2 Understand the elements of dance: space, time and energy.
3-5 1.1 Develop kinesthetic awareness.
1.2 Understand the elements of dance: space, time and energy.
6-8 1.1 Demonstrate increasing kinesthetic awareness, concentration and focus in performing movement skills.
1.2 Understand the elements of dance: space, time and energy.
9-12 1.1 Develop skills in technique.
1.2 Understand the concept of the elements of dance: space, time and energy.

Goal 2: The student will understand the process of making a dance.
(National Standard 2)

K-2 2.1 Understand that making a dance requires planning.
3-5 2.1 Understand that making a dance requires planning.
2.2 Understand the choreographic process.
2.3 Understand that dances can have different structures. (unison, canon, ABA, etc.)
6-8 2.1 Understand the concept of improvisation.
2.2 Understand the concept of composition.
9-12 2.1 Understand the concept of improvisation.
2.2 Demonstrate the ability to create dance compositions.
2.3 Recognize that the choreographic process is a process of critical/creative thinking.

Goal 3: The student will understand dance as a way to create and communicate meaning.
(National Standard 3)

K-2 3.1 Understand that dance is one among many forms of expression.
3-5 3.1 Understand that dance is one among many forms of expression.
6-8 3.1 Develop the ability to use dance as a language.
9-12 3.1 Develop the ability to use dance as a language.

Goal 4: The student will apply and demonstrate critical and creative thinking skills in dance.
(National Standard 4)

K-2 4.1 Understand that a problem can have multiple solutions.

4.2 Recognize similarities and differences in composition.
4.3 Demonstrate appropriate audience behavior while observing a dance.
3-5 4.1 Understand that a problem can have multiple solutions.
4.2 Examine similarities and differences in composition.
4.3 Understand the role of an audience for dance.
6-8 4.1 Understand that a problem/task can have more than one solution.
4.2 Analyze similarities and differences in composition.
4.3 Understand the role of an audience for dance.
4.4 Identify and apply aesthetic criteria for evaluating dance.
9-12 4.1 Understand that a problem can have multiple solutions.
4.2 Understand the role of an audience for dance.
4.3 Develop a basis for dance criticism.

Goal 5: The student will demonstrate and understand dance in various cultures and historical periods.
(National Standard 5)

K-2 5.1 Understand the role of dance in various cultures.
3-5 5.1 Understand the role of dance in various cultures.
5.2 Identify similarities and differences in dance styles from different historical periods.
6-8 5.1 Understand the role of dance in various cultures.
5.2 Identify similarities and differences in dance styles from different historical periods.
5.3 Identify important innovators in past and contemporary cultures.
9-12 5.1 Understand that dance reflects, records, and shapes history and plays a role in various cultures as a language.
5.2 Identify important innovations in past and contemporary cultures.

Goal 6: The student will make connections between dance and healthful living.
(National Standard 6)

K-2 6.1 Develop an awareness of the capabilities and limitations of the body.
6.2 Understand that dance requires discipline and personal commitment.
6.3 Adopt healthy practices which enhance the ability to dance.
6.4 Develop a positive attitude toward self, others and the dance experience.
3-5 6.1 Develop an awareness of the capabilities and limitations of the body.
6.2 Understand that dance requires discipline and personal commitment.
6.3 Adopt healthy practices which enhance the ability to dance.
6.4 Develop a positive attitude toward self, others and the dance experience.
6-8 6.1 Develop an awareness of the capabilities and limitations of the body.
6.2 Understand that dance requires discipline and personal commitment.
6.3 Adopt healthy practices which enhance the ability to dance.
6.4 Develop a positive attitude toward self, others and the dance experience.
9-12 6.1 Develop an awareness of the capabilities and limitations of the body.
6.2 Understand that dance requires discipline and personal commitment.
6.3 Assume responsibility for personal health and care of the dance instrument
6.4 Develop a positive attitude toward self, others and the dance experience.

Goal 7: The student will make appropriate connections between dance and other disciplines.
(National Standard 7)

K-2 7.1 Understand dance as a way of exploring other content areas.
3-5 7.1 Understand dance as a way of exploring other content areas.
7.2 Understand that the creative process is applicable to many content areas.
7.3 Understand the application of technology in dance.
6-8 7.1 Understand dance as a way of exploring other content areas.
7.2 Understand the application of technology in dance.
9-12 7.1 Understand dance as a way of exploring other content areas.
7.2 Understand the application of technology in dance.

Goal 8: The student will understand dance as an art form with a range of opportunities for involvement.

Note: This goal is not intended for implementation in K-5
6-8 8.1 Develop an awareness of the various dance related professions.
9-12 8.1 Understand dance as a vocation and profession.

MUSIC K-12

PURPOSE AND OVERVIEW

Purpose

Music in the public schools:

- develops perception, observation, communication and the creative process.
- strengthens the understanding of mathematics and the ability to read and write.
- is a sequential, discipline-based program.
- nurtures and utilizes a wide range of thinking skills in creation and performance.
- integrates many elements of study and knowledge of music, other art forms, other curriculum areas and related use of technology.
- helps students to understand their own and other cultures.
- increases self-discipline and control of the emotions in thinking and action.
- expands aesthetic comprehension and the ability to critique effectively.
- provides opportunities for social development and interaction with others.

- aids in learning to adapt to and respect others' diverse ways of thinking, working and expressing themselves.

- enhances problem-recognition and problem-solving abilities and the ability to consider and adopt alternative solutions.

- encourages students to expand their understandings and horizons.

- helps students to become knowledgeable consumers of music.

Grades K-2 Creating, responding to, and performing music are the fundamental music processes in which humans engage. Students in Grades K-2 learn primarily by doing. Singing, playing instruments, moving to music and creating music enable them to acquire musical skills, knowledge and attitudes that can be developed in no other way.

Grades 3-5 In Grades 3-5, these capabilities, along with learning to read and notate music gives students the skills with which to explore music independently and with others. Listening to, analyzing, and evaluating music are also important building blocks of musical learning. Moreover, to participate fully in a culturally diverse, global society, students must understand their own historical and cultural heritage and those of others within and beyond their communities. Because music is a basic expression of human culture, every student should have access to a balanced, comprehensive, and sequential program of study in music.

Grades 6-8 Students' musical development is especially critical in Grades 6-8. The music they perform or study often becomes an integral part of their personal musical repertoire. Composing and improvising provide students with unique insight into the form and structure of music and at the same time help them to develop their creativity. Extensive experiences with a variety of music are necessary if students are to make informed musical judgments. Similarly, this breadth of background enables them to begin to understand the connections and relationships between music and other disciplines. By understanding the cultural and historical forces that shape social attitudes and behaviors, students are better prepared to live and work in communities that are increasing in cultural diversity. The role that music will play in students' lives depends in large measure on the level of skills they achieve in creating, performing, and listening to music.

Grades 9-12 The study of music contributes in important ways to the quality of every student's life. Every musical work is a product of its time and place, although some works transcend their original settings and continue to appeal to humans through their timeless and universal attraction. In Grades 9-12, the student's increasing maturity and skill development in singing, playing instruments, and composing, provides for more creative expression, while a knowledge of notation and performance traditions enables the learning of new music independently throughout life. Skills in analysis, evaluation, and synthesis are important because they enable students to recognize and pursue excellence in musical experiences and to understand and enrich their own environment. Since music is an integral part of human history, the ability to listen with understanding is essential if students are to gain a broad cultural and historical perspective. The adult life of every student is enriched by the attitudes, skills and habits developed and knowledge gained through the study of music.

Comprehensive nature of program

Every aspect of music study, including performance courses, should provide instruction in creating, performing, listening to, and analyzing music, in addition to focusing on specific subject matter. Additionally, the K-12 program should make appropriate connections with other areas of the curriculum to strengthen the student's overall understanding of both music and general knowledge. **The program should especially address the student's ability to read, write and understand mathematical concepts.** Throughout this age span, direct attention should be given to the development of a breadth of thinking and social skills and to the student's understanding of the ways in which these skills relate to other areas of the curriculum and to preparation for adult life.

The intent of both the National Standards and the North Carolina Course of Study in Music is that a comprehensive understanding of music as indicated in each of the goals be developed for each student throughout the curriculum.

It is anticipated that students will have appropriate experiences in both singing and playing, along with improvisation, composition, analysis, and evaluation in all areas of music study, including Band, Chorus, Orchestra, or General Music. However, **the degree of emphasis placed on each component** may vary, depending upon the specific objectives of the course curriculum. The intent of this document is to describe a thirteen-year program (K-12) which would result from effective instruction each year. Because few students are able to have such a consistent experience, it is likely that individuals may be at different points along this continuum. However, this program of study should provide the means to determine where they are and what studies they will need to pursue to achieve a quality music education.

Relationships with other areas of the curriculum

It is also intended that music study will include the understanding of relationships between music, the other arts, and disciplines outside the arts. The student will also be expected to understand music in relation to history and culture. The development of the students' ability to make informed decisions as a consumer of music is also an intrinsic part of this area.

The comprehensiveness of this program is a departure from previous approaches which primarily stressed performance. Performance is an important aspect of music study, but cannot substitute for the students' development of the creative process and of broader integrated experiences and understandings. It is vital that experience with music of varied world cultures and varied historical periods, along with the development of thinking and social skills also be included. This program of study is designed to develop a musically literate citizen.

PROGRAM FRAMEWORK

Goal 1: The student will sing, alone and with others, a varied repertoire of music.
(National Standard 1)

K-2 1.1 Demonstrate understandings, sensitivities and skills in singing.
1.2 Demonstrate appropriate vocal practices.
1.3 Show appreciation for the efforts of others.
1.4 Sing a varied repertoire of songs.
3-5 1.1 Demonstrate understandings, sensitivities and skills in singing.
1.2 Demonstrate appropriate vocal practices.
1.3 Show appreciation for the efforts of others.
1.4 Sing a varied repertoire of choral music.
6-8 1.1 Demonstrate understandings, sensitivities and skills in singing.
1.2 Demonstrate appropriate vocal practices.
1.3 Show appreciation for the efforts of others.
1.4 Sing a varied repertoire of choral music.
9-12 1.1 Demonstrate understandings, sensitivities and skills in singing.
1.2 Demonstrate appropriate vocal practices.
1.3 Show appreciation for the efforts of others.
1.4 Sing a varied repertoire of choral music.

Goal 2: The student will perform on instruments, alone and with others, a varied repertoire of music.
(National Standard 2)

K-2 2.1 Demonstrate understandings, sensitivities and skills in playing instruments.
2.2 Demonstrate understandings, sensitivities and skills through appropriate instrumental practices.
2.3 Show appreciation for the efforts of others.
2.4 Play a varied repertoire.
3-5 2.1 Demonstrate understandings, sensitivities and skills in playing instruments.
2.2 Demonstrate understandings, sensitivities and skills through appropriate instrumental practices.
2.3 Show appreciation for the efforts of others.
2.4 Play a varied repertoire.
6-8 2.1 Demonstrate understandings, sensitivities and skills in playing instruments.
2.2 Demonstrate understandings, sensitivities and skills through appropriate instrumental practices.
2.3 Show appreciation for the efforts of others.
2.4 Play a varied repertoire.
9-12 2.1 Demonstrate understandings, sensitivities and skills in playing instruments.
2.2 Demonstrate understandings, sensitivities and skills through appropriate instrumental practices.
2.3 Show appreciation for the efforts of others.
2.4 Play a varied repertoire.

Goal 3: The student will improvise melodies, variations, and accompaniments. (National Standard 3)

K-3 3.1 Demonstrate the ability to improvise a variety of musical structures.
3-5 3.1 Demonstrate the ability to improvise a variety of musical structures.

6-8 3.1 Demonstrate the ability to improvise a variety of musical structures.
9-12 3.1 Demonstrate the ability to improvise a variety of musical structures.

Goal 4. The student will compose and arrange music within specific guidelines.
(National Standard 4)

K-3 4.1 Demonstrate the ability to compose music.
4.2 Demonstrate the ability to arrange music.
3-5 4.1 Demonstrate the ability to compose music.
4.2 Demonstrate the ability to arrange music.
6-8 4.1 Demonstrate the ability to compose music.
4.2 Demonstrate the ability to arrange music.
9-12 4.1 Demonstrate the ability to compose music.
4.2 Demonstrate the ability to arrange music.

Goal 5: The student will read and notate music.
(National Standard 5)

K-2 5.1 Demonstrate related understandings, sensitivities and skills in reading and notating music.
3-5 5.1 Demonstrate related understandings, sensitivities and skills in reading and notating music.
6-8 5.1 Demonstrate related understandings, sensitivities and skills in reading and notating music.
9-12 5.1 Demonstrate related understandings, sensitivities and skills in reading and notating music.

Goal 6 The student will listen to, analyze, and describe music.
(National Standard 6)

K-2 6.1 Identify simple musical forms.
6.2 Develop simple auditory skills.
6.3 Use appropriate terminology in explaining music, music notation, music instruments and voices, and music performances.
6.4 Identify and describe sounds from a wide variety of sources.
3-5 6.1 Identify simple musical forms.
6.2 Develop simple auditory skills.
6.3 Use appropriate terminology in explaining music, music notation, music instruments and voices, and music performances.
6.4 Identify and describe sounds from a wide variety of sources.
6-8 6.1 Identify simple musical forms.
6.2 Describe specific music events in a given aural example, using appropriate terminology.
6.3 Analyze the uses of elements of music in aural examples representing diverse genres and cultures.
6.4 Demonstrate knowledge of the basic principles of music construction in the analysis of music.
6.5 Identify and describe sounds from a wide variety of sources.
9-12 6.1 Identify musical forms.
6.2 Describe specific music events in a given aural example, using appropriate terminology.
6.3 Analyze aural examples of a varied repertoire of music.
6.4 Demonstrate an extensive knowledge of the technical vocabulary of music.

6.5 Identify and describe sounds from a wide variety of sources.
6.6 Identify and explain a variety of compositional devices and techniques.

Goal 7: The student will evaluate music and music performances.
(National Standard 7)

K-2 7.1 Devise and apply criteria for evaluating compositions and performances.
7.2 Explain, using appropriate terminology, personal preferences for specific musical works and styles.
3-5 7.1 Devise and apply criteria for evaluating compositions and performances.
7.2 Explain, using appropriate terminology, personal preferences for specific musical works and styles.
6-8 7.1 Devise and apply criteria for evaluating compositions and performances.
7.2 Refine evaluative criteria and apply them for constructive improvement.
9-12 7.1 Refine evaluative criteria and apply them for constructive improvement.
7.2 Evaluate musical works by comparing them to similar or exemplary models.

Goal 8: The student will understand relationships between music, the other arts, and disciplines outside the arts.
(National Standard 8)

K-2 8.1 Identify similarities and differences in the meanings of common terms used in the various arts.
8.2 Identify ways in which the principles and subject matter of other disciplines taught in the school are interrelated with those of music.
3-5 8.1 Identify similarities and differences in the meanings of common terms used in the various arts.
8.2 Identify ways in which the principles and subject matter of other disciplines taught in the school are interrelated with those of music.
6-8 8.1 Compare in two or more arts how the characteristic materials of each art can be used to transform similar events, scenes, emotions, or ideas into works of art.
8.2 Identify ways in which the principles and subject matter of other disciplines taught in the school are interrelated with those of music.
9-12 8.1 Explain how elements, artistic processes, and organizational principles are used in similar and distinctive ways in the various arts and cite examples.
8.2 Compare characteristics of two or more arts within a particular historical period or style and cite examples from various cultures.
8.3 Explain ways in which the principles and subject matter of various disciplines outside the arts are interrelated with those of music.

Goal 9: The student will understand music in relation to history and culture.
(National Standard 9)

K-2 9.1 Identify by genre or style aural examples of music from different historical periods and cultures.
9.2 Describe in simple terms how elements of music are used in music examples from various cultures of the world.
9.3 Identify various uses of music in daily experiences and describe characteristics that make certain music suitable for each use.
9.4 Identify and describe roles of musicians in various music settings and in various cultures.
9.5 Demonstrate audience behavior appropriate for the context and style of music performed.

3-5 9.1 Identify by genre or style aural examples of music from different historical periods and cultures.
9.2 Describe in simple terms how elements of music are used in music examples from various cultures of the world.
9.3 Identify various uses of music in daily experiences and describe characteristics that make certain music suitable for each use.
9.4 Identify and describe roles of musicians in various music settings and in various cultures.
9.5 Demonstrate audience behavior appropriate for the context and style of music performed.

6-8 9.1 Identify by genre or style aural examples of music from different historical periods and cultures.
9.2 Describe distinguishing characteristics of representative music genres and styles from a variety of cultures.
9.3 Classify by genre and style a variety of musical works.
9.4 Identify various uses of music in daily experiences and describe characteristics that make certain music suitable for each use.
9.5 Compare, in several cultures of the world, functions music serves, roles of musicians, and conditions under which music is typically performed.
9.6 Demonstrate audience behavior appropriate for the context and style of music performed.

9-12 9.1 Identify and explain the features of a given musical work that define its genre and style and its historical or cultural context.
9.2 Describe distinguishing characteristics of representative music genres and styles from a variety of cultures.
9.3 Classify by genre and style.
9.4 Identify various uses of music in daily experiences and describe characteristics that make certain music suitable for each use.
9.5 Identify various roles that musicians perform.
9.6 Demonstrate audience behavior appropriate for the context and style of music performed.

Goal 10: The student will demonstrate the ability to make informed decisions as a consumer of music.

K-2 10.1 Develop an understanding that quality in music depends on the music itself, and/or the way in which it is performed.
10.2 Demonstrate an understanding that quality in music equipment depends on the materials of which it is made and the way in which it is constructed.
10.3 Demonstrate an understanding that knowledge is essential to evaluate quality.
10.4 Demonstrate an understanding that informed decisions should be based on appropriate knowledge.

3-5 10.1 Develop an understanding that quality in music depends on the music itself, and/or the way in which it is performed.
10.2 Demonstrate an understanding that quality in music equipment depends on the materials of which it is made and the way in which it is constructed.
10.3 Demonstrate an understanding that knowledge is essential to evaluate quality.
10.4 Demonstrate an understanding that informed decisions should be based on appropriate knowledge.

6-8 10.1 Develop an understanding that quality in music depends on the music itself, and/or the way in which it is performed.
10.2 Demonstrate an understanding that quality in music equipment depends on the materials of which it is made and the way in which it is constructed.
10.3 Demonstrate an understanding that knowledge is essential to evaluate quality.

10.4 Demonstrate an understanding that informed decisions should be based on appropriate knowledge.

9-12 10.1 Develop an understanding that quality in music depends on the music itself, and/or the way in which it is performed.

10.2 Demonstrate an understanding that quality in music equipment depends on the materials of which it is made and the way in which it is constructed.

10.3 Demonstrate an understanding that knowledge is essential to evaluate quality.

10.4 Demonstrate an understanding that informed decisions should be based on appropriate knowledge.

THEATRE ARTS

PURPOSE AND OVERVIEW

Purpose Theatre arts in the public schools teaches the basic skills, thinking skills and personal qualities which:

- develop an understanding of the ideas, attitudes, beliefs, and feelings of diverse people in different times throughout history as communicated through literature and theatre.
- employ techniques for teaching and learning through developmental processes and activity-oriented methods.
- promote higher level critical and creative thinking skills, problem recognition and problem solving, intuition, examination and implementation of conflict resolution, and the learning of reading, writing, math and other areas of the curriculum.
- assist in focusing the emotions for controlled use, strengthening the imagination for creative self-expression, disciplining the voice and body for purposeful use, expanding intellectual horizons to include aesthetic awareness, and providing a basic understanding and critical appreciation of all the theatre arts.
- involve making connections between theatre arts and other art forms, other curriculum areas, dramatic media, and the related use of technology to include numbers and data.
- provide an intense study of what playwrights seek to convey and how this is intensified through theatrical production thus, giving students insights into countless aspects of the diverse and changing world.
- include the reading, viewing, listening, researching, writing, speaking, preparing to perform, performing, and directing of traditional and experimental theatrical forms, as well as, the accompanying aspects of technical production.
- engage students in the creative process and the practical application of theatre techniques (such as observing, considering possibility, and communicating) which students can use in studying other areas of the curriculum and for life-long learning.

- and enable students to function and communicate more proficiently, work independently as a member of a team, to value the individual contributions of others, and to learn virtually any subject matter in a more dynamic way.

Basis Theatre, the imagined and enacted world of human beings, is one of the primary ways children at an early age learn about life - about actions and consequences, about customs and beliefs, about others and themselves. They learn through their social pretend play and from hours of viewing television and film. Children use pretend play as a means of making sense of the world; they create situations to play and assume roles; they interact with peers and arrange environments to bring their stories to life; they direct one another to bring order to their drama, and they respond to one another's dramas. In other words, children arrive at school with rudimentary skills as playwrights, actors, designers, directors, and audience members; theatre education should build on this foundation. This framework assumes that theatre arts education will start with and have a strong emphasis on improvisation, which is the basis of social pretend play.

Sequence In an effort to create a seamless transition from the natural skills of pretend play to the study of theatre, this framework integrates the several aspects of the art form: script writing, acting, designing, directing, researching, comparing art forms, analyzing and critiquing, and understanding context. Because of the broad base of knowledge and skills involved in creating, responding to, and performing in theatre arts, experiences and learning must evolve in a sequential manner. Every area of study in theatre arts must be developed in this logical way for students to be able to understand and participate to the best of their ability at each ensuing level of comprehension and refinement. Furthermore, this framework is designed and organized so that teachers of students arriving at a grade level for which they lack prior training may incorporate developmentally appropriate learning sequences from an earlier level.

Grades K-2 In grades K-2, students begin theatre arts with a sequence of creative activities. Through experiential learning, students participate in speaking, moving, creating, doing, and evaluating activities. All of these help develop thinking and learning skills, promote self-expression, and foster the ability to interact with and be tolerant of others. Inherent in this process is the development of personal discipline, greater confidence, and the skills and ability to make decisions and think critically. Students are placed in situations where creative abilities become apparent, can be nurtured by the teacher, and used by the students. These situations naturally lead students to begin realizing their creative potential and experimenting with their abilities in a teacher-created and facilitated, non-threatening learning atmosphere. A student's reasonable attempt to follow through with the process and complete the activity is considered to be the measure of success.

Grades 3-5 Initially in grades 3-5, teachers guide students to develop group skills. Importance is placed on helping children feel capable and free to become involved in classroom drama activities and to interact in a socially productive way with peers. Participation in creative drama activities encourages listening, risk-taking, observing, concentrating, following directions, and communicating by means of controlled verbal and physical responses. These activities are used as a teaching tool with pantomime, role playing, improvisation, movement exercises and exploration, sense awareness exercises, characterization, group theatre games, and other similar activities.

As students progress through the elementary grades, emphasis is placed on developing greater awareness of their world and more specific skills applicable to the theatrical process. Students are given more individual responsibility and are encouraged to contribute ideas, make decisions, and provide direction to others in controlled situations. Creative drama activities become more complex and demanding. The teacher may choose to use children's literature, both prose and poetry, for dramatic adaptations or as a context for creative drama activities. Curriculum integration is easily accomplished through creative drama activities and provides students with an opportunity to use both writing and computer skills in relevant, expressive and creative ways. Some basic acting and technical theatre skills relative to theatrical presentation are introduced, allowing students to share their own work or participate in the work of other playwrights.

Presentations are an option to be considered by the elementary teacher as the natural culmination of a creative process, rather than an artificially imposed requirement. Emphasis must be on student learning and positive reaction, rather than on trying to impress adults. Theatre is often referred to as a shared experience between actors and an audience, therefore, student pride and development in sharing theatre is what makes performance worthwhile. The complexity or formality of any theatrical performance should be dependent upon the comfort level, enthusiasm and willingness of both the students and the teacher. There are many other things students can do to participate in and support classroom presentations, so students who are genuinely afraid to perform in front of an audience should never be forced to do so.

Beginning with early elementary levels, students should examine the role of the audience in theatre. Teachers should be diligent in requiring students to be respectful audience members for any presentation, sharing activity or similar group situations, whether in the classroom or in a more formal setting. In order to share in and benefit from any presentational activity, students must demonstrate appropriate audience behavior. Selecting or generating presentations of a length corresponding to the students' developmental level will aid the teacher in this effort.

Grades 6-8

Throughout grades 6-8, students begin to develop theatre literacy. In theatre, the artists create an imagined world; it is the role of theatre to lead the audience into this visual, aural, and oral world. It is important that students learn to see the created world of theatre through the eyes of the playwright, actor, designer, and director. Through active creation of theatre, students learn to understand artistic choices and to critique dramatic works. Middle school students should play a larger role in the planning and evaluation of their work. They should continue to use drama as a means of confidently expressing themselves, thus developing their "personal voice." With greater emphasis on reading, writing and performing scripts, students through improvisation and collaboration should begin to create plays based on peer issues, concerns, and interests. Likewise, they should be introduced to plays and experiences that reach beyond their communities to national, international, and historically representative themes. Growing differences in abilities and interests characterize students at this age and, for this reason, provisions should be made for individual emphasis by assigning individual special projects or placing students in various leadership roles. The emphasis should be on helping students use drama more discriminatingly and productively in daily living and, as a participant or viewer, to incorporate it into their lives. Students should come to perceive theatre as a means of pleasure, communication and learning. Theatre should become a part of the students' experience of life as a whole.

Grades 9-12 Students in grades 9-12 view and construct dramatic works as metaphorical visions of life that embrace connotative meanings, juxtaposition, ambiguity, and varied interpretations. By creating, performing, analyzing, and critiquing dramatic performances, they develop a deeper understanding and acceptance of personal issues and a broader world view that includes international issues. Since theatre in all its forms reflects and affects life, students should learn about representative dramatic texts and performances, the place of that work and those events in history, as well as, the impact of those events on the past and present. Classroom work becomes more formalized both through individual courses and across a broad range of varied course offerings. Knowledge of theatre literature and history is stressed. Knowledge and skills in technical theatre and performing are cultivated along with the resulting insight into using the knowledge and skills in everyday life situations

The theatre arts program at the high school level recognizes that students will be approaching class work with a variety of abilities, experiences, and personal needs. Some students will have had the advantage of previous work in grades K-8 while some will sign up for a theatre class for the first time. The program is flexible enough to allow for variation; since much of learning is trial and error. Students who say "yes" to learning, to trying new ideas and approaches, and committing to the work and discipline of theatre will grow personally and develop theatrical skills in a positive and dynamic way. At this level, students' interests and abilities in theatre arts vary widely and will determine the direction pursued by each student. Courses in all phases of formal theatre and development of original work to include designs, character portrayals, and scripts are featured. Important aspects of the program are acting, directing, play writing, designing and producing in all areas of theatrical presentation, and the accompanying aspects of management and organization.

Through this framework, students K-12 are encouraged to develop an appreciation and understanding of theatre in relationship to themselves, their community and other communication media; and as an art form, as a career possibility, as entertainment, and as a means to learn about, question, and celebrate life.

PROGRAM FRAMEWORK

Goal 1: The student will write based on personal experience and heritage, imagination, literature, and history.
(National Standard 1)

K-2 1.1 Recognize what drama is and how it happens.
1.2 Understand that stories have a setting.
1.3 Develop simple dramas.
3-5 1.1 Define what constitutes drama.
1.2 Develop writings meaningful to drama.
6-8 1.1 Recognize unique characteristics of the dramatic script.
1.2 Practice strategies for writing dramatic material.
1.3 Practice play writing.
1.4 Respond to dramatic material.
9-12 1.1 Understand the form and structure of scripts.
1.2 Understand the basic content of plays.
1.3 Understand the function of a playwright.

Goal 2: The student will act by interacting in improvisations and assuming roles.
(National Standard 2)

K-2 2.1 Recognize that pretend play is dramatic.
2.2 Differentiate between dramatic play and creative drama.
2.3 Understand the difference between actor and character.
2.4 Develop and apply kinesthetic skills necessary for acting.
3-5 2.1 Develop and apply listening and concentration skills necessary for acting.
2.2 Develop and apply vocal and auditory skills necessary for acting.
2.3 Develop and apply kinesthetic skills necessary for acting.
6-8 2.1 Develop role-playing and characterization skills.
2.2 Utilize role-playing skills in the total learning process.
2.3 Synthesize research, observation, given circumstances, and acting skills to create characters in formal and/or informal presentations.
9-12 2.1 Develop an awareness of the self as a thinking, creative, performing whole.
2.2 Develop and understand the body and the use of movement in the dramatic process.
2.3 Understand and develop the vocal instrument and its use in the dramatic process.
2.4 Understand and participate in ensembles.
2.5 Explore and expand dramatic concepts thorough improvisations.
2.6 Explore and expand methods of characterization.
2.7 Understand and participate in the acting of a performance.

Goal 3: The student will design and produce theatre by conceptualizing and realizing artistic interpretations for informal or formal productions.
(National Standard 3)

K-2 3.1 Understand that a playing space is a dramatic element.
3.2 Manipulate the playing space and materials to create an environment.
3-5 3.1 Recognize and identify simple technical elements of the theatre process.
3.2 Apply simple technical elements to the theatre process.
6-8 3.1 Understand the technical elements in the theatre process.
3.2 Plan an environment for formal or informal dramatic presentations.

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3.3 Create an environment for formal or informal presentations.

9-12 3.1 Understand and demonstrate a working knowledge of how the various areas of technical theatre operate and support performances in K-12 educational theatre.

3.2 Understand and demonstrate a working knowledge of the scene design process.

3.3 Demonstrate an understanding of construction, acquisition, and operation of scenery.

3.4 Understand and demonstrate a working knowledge of design, installation, acquisition, and operation of lighting.

3.5 Understand and demonstrate a working knowledge of design, construction, acquisition, and implementation of costumes.

3.6 Understand and demonstrate a working knowledge of design, application, acquisition, and implementation of makeup.

Goal 4: The student will direct through planning and presenting informal or formal productions.
(National Standard 4)

K-2 4.1 Experience artistic decision making in the creation of a drama.

4.2 Experience the process of planning and presenting a dramatic work.

3-5 4.1 Explore leadership skills during drama activities.

4.2 Expand interpersonal and collaboration skills.

6-8 4.1 Begin to understand the directing process.

4.2 Carry out, as appropriate, designated responsibilities of the director.

9-12 4.1 Understand the role of directing in the theatre process.

4.2 Understand the essential components of theatre direction.

Goal 5: The student will research by finding information to support informal or formal productions.
(National Standard 5)

K-2 5.1 Choose ideas, objects or other stimuli to use as a basis for drama activities.

3-5 5.1 Develop research skills necessary for planning dramatic presentations.

6-8 5.1 Gather, evaluate, and use information as a basis for dramatic activities.

9-12 5.1 Develop an awareness of the impact history and theatre have had upon each other.

5.2 Develop a sense of how theatre has evolved.

5.3 Develop a world view of theatre's role in society.

5.4 Develop an awareness of dramatic and literary genres.

Goal 6: The student will compare and integrate art forms by analyzing traditional theatre, dance, music, visual arts, and new art forms.
(National Standard 6)

K-2 6.1 Explore other art forms.

6.2 Explore how other dramatic media and art forms relate to theatre.

3-5 6.1 Explore and understand the basic nature of dramatic media and its relationship to other art forms.

6-8 6.1 Explore and understand the basic nature of art forms.

6.2 Understand that theatre can synthesize all the arts.

9-12 6.1 Explore and understand the basic nature of art forms and how they relate to the study, process and production of theatre.

6.2 Understand theatre as a synthesis of all arts.

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Goal 7: The student will analyze, critique, and construct meaning from informal and formal theatre, film, television, and electronic media productions.
(National Standard 7)

K-2 7.1 Respond to how drama effects our thoughts and feelings.
7.2 Respond to differences between live and recorded productions.
3-5 7.1 Understand and analyze dramatic elements found in theatre, film, television, and electronic media presentations.
7.2 Identify and recognize personal responses to dramatic productions.
7.3 Identify and respond to the differences between live theatre, film, television, and electronic media.
6-8 7.1 Respond to theatre and related dramatic media.
7.2 Analyze and critique works of informal and formal theatre, film, television, and electronic media productions.
7.3 Express meaning perceived from informal and formal theatre, film, television, and electronic media productions.
9-12 7.1 Understand, analyze, and evaluate dramatic elements.

Goal 8: The student will understand context by analyzing the role of theatre, film, television, and electronic media in the past and present.
(National Standard 8)

k-2 8.1 Develop an awareness that drama comes from all cultures throughout time.
8.2 Understand the impact of theatre, film, television, and electronic media on people's lives.
3-5 8.1 Understand that theatre is a time-honored art form.
8.2 Relate theatre and dramatic media to life situations.
8.3 Explore roles and careers in theatre and related media.
6-8 8.1 Compare and contrast theatre and related media to real life.
8.2 Understand how theatre and related media have reflected and transformed various cultures throughout history.
9-12 8.1 Compare and contrast productions with life situations.
8.2 Understand the role of theatre and related areas as an avocation.
8.3 Understand the roles and careers of theatre and related areas.
8.4 Demonstrate responsible behavior and social discipline through theatre and related media.

VISUAL ARTS K-12

PURPOSE AND OVERVIEW

Purpose Visual arts in the public schools:

- employs developmentally appropriate processes for teaching and learning that are based on activity-oriented methods.

- encourages disciplined creativity by using higher level critical thinking skills to identify problems, explore original solutions, and complete the problem solving process. This has practical application not only in visual arts, but in all areas of the curriculum and for life-long learning.

- utilizes reading, writing and math to help explore art concepts and facilitates learning in these three areas.
- makes enriching connections between the visual arts and other curriculum areas.
- expands aesthetic and intellectual awareness through reading, writing, listening, researching, discussing, criticizing, and reflective thinking.
- teaches how to use both traditional media and contemporary methods incorporating new technology to create art that is individual and expressive.
- builds knowledge and understanding about ideas, values, and beliefs of people in different times throughout history as communicated through visual art with the express goal of developing visually literate students who have an empathetic and critical appreciation of the artistic achievements of others.

Basis

From the beginning of time, the compulsion to create a visual vocabulary has been as innate in every society as the desire to acquire a system of spoken symbols. Visual art from past civilizations is frequently one of the few remaining clues with the power to illuminate which values were held most dear. As we re-discover these fragments of mankind's puzzle and attempt to piece together our common humanity, the undeniable power of visual expression is an immutable and triumphant message. Today, every aspect of our designed environment will serve the same purpose of explaining who we are to those of the future.

If we study the growth and development of an individual child, the pattern of society to develop a multisensory means of communicating symbols and values is then clearly revealed as a reflection of the maturation process of every member of every society. A child discovers objects, those objects take on meaning, and this meaning is denoted and communicated through the various means of expression available to that child. The goal in educating every child must be to allow each to develop the most complete expression of self and potential, an expression that can only occur if all the senses are involved. In acquiring an education, the senses know no curricular boundaries. As visual arts educators, we believe the purpose of education is to aid in the development of all children, that all children must be allowed to reach their full potential, and that this can only be accomplished by encouraging the use of all the communication skills they have as their birthright. Our commitment is to provide visual literacy for every child by promoting fluency in the various modes of visual communication to include studio production, art history, aesthetics and criticism. Students learn the characteristics of visual arts by using a wide range of subject matter, media and means to express their ideas, emotions and knowledge. They evaluate the merits of their efforts and this assessment forms the basis for further growth that extends to all disciplines in school and to life in general.

The program outlined in this document is structured to accomplish both specific art objectives and embrace integrated concepts. To meet the Visual Arts Program goals for each grade, students must be able to understand and apply concepts that become sequentially more complex.

Grades K-2

In grades K-2, importance is placed on fostering student confidence by involving them in art activities directly related to their own experience. The development of observation skills helps children make discoveries in their own environment. Exploration of their imagination is as highly valued as awareness of their immediate surroundings. Eye and hand coordination increase through the manipulation of art media and tools. Art history, aesthetics and criticism are introduced in primary terms. Discovering the art of artists in other times and places expands the child's concept of time. They learn that different types of art have been valued and are encouraged to go beyond "I like it" to explain what they enjoy about a particular work of art.

Grades 3-5

In grades 3-5, students display increased manual dexterity. They use a broader range of subject matter and media. Ideas which impact their art are incorporated from a variety of sources to include individual readings out of books, magazines and reference material. They grow more sophisticated in depicting movement, relationships and emotions in their work. Cognitively, they develop a sense of history, including an ability to distinquish between art created by different cultures. Students begin to enjoy knowing and sharing interesting facts about various artists and the times in which they lived. Class discussion about art work should be typified by a much greater verbal fluency, the incoporation of selected art vocabulary, and a focus on expressing oneself in a positive manner.

Grades 6-8

In grades 6-8, students' own art making becomes infused with a variety of images and approaches. They are very aware of popular culture and may want to incorporate elements from this culture into their art. Students learn to accept that others' preferences may differ from their own but begin to appreciate multiple artistic solutions and interpretations. Questions asked in response to artwork become more refined and probing. Study of historical and cultural context gives students insight into the role of visual arts as a record of human achievement. As they consider artworks in historical perspective, students begin to gain a clearer understanding of what they themselves value.

Grades 9-12

In grades 9-12, students develop deeper and more profound work reflecting both their emotional maturity and their creative and critical problem solving abilities. They are physically capable of producing work that demonstrates more sophisticated technical skill. Their work, at its' best, reflects a high level of synthesis leading to original and personal interpretation. Using an extensive and precise vocabulary, they should express well-reasoned thoughts about their own and other work. They should be sensitive to the artistic qualities in works of art, nature and human environments. Likewise, students should be able to relate what they have learned from the study of the historical and cultural context of art to situations in contemporary life.

Focus

The focus of the K-12 Visual Arts Program is on the multifaceted creative process which includes the development of perceptual awareness, the ability to use materials expressively, and growth in the use of creative and critical thinking skills. These components of the creative process are taught by using a variety of approaches that integrate history/appreciation, aesthetics, criticism and studio work. As a result of visual arts study, students are given a life-long process for problem solving that has direct relevance to all other disciplines. Through participation in visual arts, students have the opportunity to recognize and celebrate the creativity inherent in all of us.

PROGRAM FRAMEWORK

Goal 1: The student will develop critical and creative thinking skills and perceptual awareness necessary for understanding and producing art.

K-2 1.1 Plan and organize for creating art.
1.2 Develop strategies for imagining and implementing images.
1.3 Recognize in a world of imagination there is no right or wrong, but some solutions are better than others.
1.4 Recognize that images from reality and from fantasy may be used to create original art.
1.5 Show development of ideas across time.
1.6 Use all senses to gain information.

3-5 1.1 Plan and organize for creating art.
1.2 Develop strategies for imagining and implementing images.
1.3 Recognize in a world of imagination there is no right or wrong, but some solutions are better than others.
1.4 Recognize that images from reality and from fantasy may be used to create original art.
1.5 Show development of ideas across time.
1.6 Use all senses to gain information.

6-8 1.1 Plan and organize for creating art.
1.2 Develop strategies for imagining and implementing images.
1.3 Recognize in a world of imagination there is no right or wrong, but some solutions are better than others.
1.4 Recognize that images from reality and from fantasy may be used to create original art.
1.5 Show development of ideas across time.
1.6 Develop perceptual awareness through the use of all senses.

9-12 1.1 Plan and organize for creating art.
1.2 Develop strategies for imagining and implementing images.
1.3 Recognize in a world of imagination there is no right or wrong, but some solutions are better than others.
1.4 Recognize that images from reality and from fantasy may be used to create original art.
1.5 Show development of ideas across time.
1.6 Develop perceptual awareness through the use of all senses.

Goal 2: The student will develop skills necessary for understanding and applying media, techniques, and processes.
(National Standard 1)

K-12 2.1 Explore unique properties and potential of materials.
2.2 Learn techniques and processes for working with each material.
2.3 Use different media and techniques expressively.
2.4 Use art materials and tools in a safe and responsible manner.
3-5 2.1 Explore unique properties and potential of materials.
2.2 Learn techniques and processes for working with each material.
2.3 Use different media and techniques expressively.
2.4 Use art materials and tools in a safe and responsible manner.
6-8 2.1 Explore unique properties and potential of materials.
2.2 Learn techniques and processes for working with each material.
2.3 Use different media and techniques expressively.
2.4 Use art materials and tools in a safe and responsible manner.
9-12 2.1 Explore unique properties and potential of materials.
2.2 Learn techniques and processes for working with each material.
2.3 Use different media and techniques expressively.
2.4 Use art materials and tools in a safe and responsible manner.

Goal 3: The student will organize the components of a work into a cohesive whole through knowledge of organizational principles of design and art elements.
(National Standard 2)

K-2 3.1 Recognize and apply the elements of art in an aesthetic composition.
3.2 Recognize and apply the design principles used in composition.
3.3 Recognize that diverse solutions are preferable to predetermined visual solutions.
3.4 Recognize the value of intuitive perceptions in the problem-solving process.
3.5 Recognize the value of experimentation in the problem-solving process.
3-5 3.1 Recognize and apply the elements of art in an aesthetic composition.
3.2 Recognize and apply the design principles used in composition.
3.3 Recognize that diverse solutions are preferable to predetermined visual solutions.
3.4 Recognize the value of intuitive perceptions in the problem-solving process.
3.5 Recognize the value of experimentation in the problem-solving process.
6-8 3.1 Recognize and apply the elements of art in an aesthetic composition.
3.2 Recognize and apply the design principles used in composition.
3.3 Recognize that diverse solutions are preferable to predetermined visual solutions.
3.4 Recognize the value of intuitive perceptions in the problem-solving process.
3.5 Recognize the value of experimentation in the problem-solving process.
9-12 3.1 Recognize and apply the elements of art in an aesthetic composition.
3.2 Recognize and apply the design principles used in composition.
3.3 Recognize that diverse solutions are preferable to predetermined visual solutions.
3.4 Recognize the value of intuitive perceptions in the problem-solving process.
3.5 Recognize the value of experimentation in the problem-solving process.

Goal 4: The student will choose and evaluate a range of subject matter and ideas to communicate intended meaning in artworks.
(National Standard 3)

K-2 4.1 Demonstrate the use of life surroundings and personal experiences to express ideas and feelings visually.
4.2 Interpret the environment through art.
4.3 Invent original and personal imagery to convey meaning and not rely on copying, tracing, patterns or duplicated materials.
4.4 Explore how artists develop personal imagery and style.
3-5 4.1 Demonstrate the use of life surroundings and personal experiences to express ideas and feelings visually.
4.2 Interpret the environment through art.
4.3 Invent original and personal imagery to convey meaning and not rely on copying, tracing, patterns or duplicated materials.
4.4 Explore how artists develop personal imagery and style.
6-8 4.1 Demonstrate the use of life surroundings and personal experiences to express ideas and feelings visually.
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9-12 4.1 Demonstrate the use of life surroundings and personal experiences to express ideas and feelings visually.
4.2 Interpret the environment through art.
4.3 Invent original and personal imagery to convey meaning and not rely on copying, tracing, patterns or duplicated materials.
4.4 Explore how artists develop personal imagery and style.

Goal 5: The student will understand the visual arts in relation to history and cultures.
(National Standard 4)

K-2 5.1 Know that the visual arts have a history, purpose and function in all cultures.
5.2 Identify specific works of art as belonging to particular cultures, times and places.
5.3 Introduce works of art from different times and cultures.
5.4 Recognize selected works of art and artists.
5.5 Recognize the existence of universal themes in art throughout history.
5.6 Recognize that cultures have different ideas about what is pleasing and acceptable (aesthetics).
3-5 5.1 Know that the visual arts have a history, purpose and function in all cultures.
5.2 Identify specific works of art as belonging to particular cultures, times and places.
5.3 Compare works of art from different times and cultures.
5.4 Recognize selected works of art and artists.
5.5 Recognize there are many themes in art common throughout history.
5.6 Recognize that cultures have different ideas about what is pleasing and acceptable (aesthetics).
6-8 5.1 Know that the visual arts have a history, purpose and function in all cultures.
5.2 Identify specific works of art as belonging to a particular culture, time and place.
5.3 Compare relationships of works of art to one another in terms of history, aesthetics, and cultural/ethnic groups.
5.4 Recognize the existence of art movements, periods, and styles.
5.5 Recognize the existence of universal theme in art throughout history.

5.6 Recognize that cultures have different aesthetics and each individual is a product of his or her culture.

9-12 5.1 Know that the visual arts have a history, purpose and function in all cultures.

5.2 Identify specific works of art as belonging to particular cultures, times and places.

5.3 Compare relationships of works of art to one another in terms of history, aesthetics, and cultural/ethnic groups.

5.4 Recognize the existence of art movements, periods, and styles.

5.5 Recognize the existence of universal theme in art throughout history.

5.6 Recognize that cultures have different aesthetics and each individual is a product of his or her culture.

Goal 6: The student will reflect upon and assess the characteristics and merits of their work and the work of others.

(National Standard 5)

K-2 6.1 Understand there are various purposes for creating works of visual art.

6.2 Describe how people's experiences influence the development of specific artworks.

6.3 Accept other's work and ideas as unique expression of themselves.

6.4 Recognize that we should learn from our mistakes as part of the creative process.

6.5 Critique artwork through the use of: proper vocabulary, art elements and design principles, meaning, feeling, mood and ideas.

6.6 Understand there are varied responses to specific artworks.

3-5 6.1 Understand there are various purposes for creating works of visual art.

6.2 Describe how people's experiences influence the development of specific artworks.

6.3 Accept other's work and ideas as unique expression of themselves.

6.4 Recognize that we should learn from our mistakes as part of the creative process.

6.5 Critique artwork through the use of: proper vocabulary, art elements and design principles, meaning, feeling, mood and ideas.

6.6 Understand there are varied responses to specific artworks.

6-8 6.1 Understand there are various purposes for creating works of visual art.

6.2 Describe how people's experiences influence the development of specific artworks.

6.3 Accept other's work and ideas as unique expression of themselves.

6.4 Recognize that unsuccessful efforts can be a constructive part of growth in the creative process.

6.5 Critique artwork through the use of: proper vocabulary, art elements and design principles, meaning, feeling, mood and ideas, oral and written expression.

6.6 Understand there are varied responses to specific artworks.

9-12 6.1 Understand there are various purposes for creating works of visual art.

6.2 Describe how people's experiences influence the development of specific artworks.

6.3 Accept other's work and ideas as unique expression of themselves.

6.4 Recognize the constructive role of failure as a part of the creative process.

6.5 Critique artwork through the use of: proper vocabulary, art elements and design principles, meaning, feeling, mood and ideas, oral and written expression.

6.6 Understand there are varied responses to specific artworks.

Goal 7: The student will perceive connections between visual arts and other disciplines.

(National Standard 6)

- K-2
  - 7.1 Identify connections between the visual arts and other disciplines.
  - 7.2 Explore connections within the arts disciplines.
  - 7.3 Discuss how the artwork people produce, reflects the times in which they live.
  - 7.4 Recognize how current technology affects visual arts and other disciplines.
- 3-5
  - 7.1 Identify connections, similarities and differences between the visual arts and other disciplines.
  - 7.2 Explore connections within the arts disciplines.
  - 7.3 Discuss how the artwork people produce, reflects the times in which they live.
  - 7.4 Recognize how current technology affects visual arts and other disciplines.
- 6-8
  - 7.1 Identify connections, similarities and differences between the visual arts and other disciplines.
  - 7.2 Describe ways the art elements and design principles interrelate within all arts disciplines.
  - 7.3 Compare characteristics of visual arts within a particular historical period or style with ideas, issues or themes in other disciplines.
  - 7.4 Recognize how current technology affects visual arts and other disciplines.
- 9-12
  - 7.1 Identify connections, similarities and differences between the visual arts and other disciplines.
  - 7.2 Describe ways the art elements and design principles interrelate within all arts disciplines.
  - 7.3 Compare characteristics of visual arts within a particular historical period or style with ideas, issues or themes in other disciplines.
  - 7.4 Recognize how current technology affects visual arts and other disciplines.

Goal 8: The student will develop an awareness of art as an avocation and profession.

- K-2
  - 8.1 Develop an awareness of art as an avocation.
  - 8.2 Develop an awareness of art as a profession.
  - 8.3 Discover that art provides an opportunity for lifelong learning, both vocationally and avocationally.
- 3-5
  - 8.1 Develop an awareness of art as an avocation.
  - 8.2 Develop an awareness of art as a profession.
  - 8.3 Discover that art provides an opportunity for lifelong learning, both vocationally and avocationally.
- 6-8
  - 8.1 Develop an awareness of art as an avocation.
  - 8.2 Develop an awareness of art as a profession.
  - 8.3 Discover that art provides an opportunity for lifelong learning, both vocationally and avocationally.
- 9-12
  - 8.1 Develop an awareness of art as an avocation.
  - 8.2 Develop an awareness of art as a profession.
  - 8.3 Discover that art provides an opportunity for lifelong learning, both vocationally and avocationally.

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We wish to express our appreciation of and indebtedness to the National Standards for Arts Education. The introductions in this document are based to a considerable extent on the introduction and openings to each of the subject area sections in the national standards document.

COMPUTER/ TECHNOLOGY SKILLS

Standard Course of Study and Grade Level Competencies

K-12

COMPUTER / TECHNOLOGY SKILLS

Public Schools of North Carolina
Department of Public Instruction

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- those who participated in public hearings
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- the office support staff who assisted the work of the committee and processed documents for mailings

- the Division of Communications Services for technical assistance in the publication of the documents

The current revision process involved on some level the entire education community, and its end product is a North Carolina curriculum of which the state can be justifiably proud. We will constantly revise and improve the ***Standard Course of Study*** in order that it will continue to meet the needs of the children of North Carolina.

PREFACE

In fall 1996 a committee of system-level media and/or technology coordinators/directors, school administrators, representatives from institutions of higher education and classroom teachers was established to update and revise the 1992 ***K-12 Computer Skills Standard Course of Study***. An evaluation of the 1992 Computer Skills Curriculum evolved through whole-group discussion determining that the three original goals were still relevant to the learner. However, the objectives needed revision and/or a shift in where grade-level implementation should occur. The committee determined the need to reduce the number of topic strands.

In December 1996 a survey to get direct input from K-12 educators was developed and disseminated to 2000 participants and vendors at the North Carolina Educational Technology Conference. Survey results and focus group reactions were reviewed by the committee and evolved into the first draft of goals and objectives for the Computer/Technology Skills Curriculum.

This draft document was distributed among Instructional Services consultants for review and comment. Also the Computer Skills Curriculum Committee met with various Instructional Services content area specialists to get input and help with integrating relevant subject area concepts into the Computer/Technology Skills Curriculum.

Copies of the Draft Computer/Technology Skills Curriculum were distributed at seven focus group sessions at various intervals throughout the revision process to get reaction to the ongoing work of the committee and to solicit input. Focus Group sessions were conducted at the following conferences:

- North Carolina Educational Technology Conference - December 1996
- North Carolina Association for Educational Communications & Technology Conference - March 1997
- East Carolina University Teaching and Technology Conference - April 1997
- North Carolina Science Teachers Conference - November 1997
- North Carolina Educational Technology Conference - December 1997
- North Carolina Association for Educational Communications & Technology Conference - February 1998
- North Carolina Middle Schools Association Conference - March 1998

An update of the curriculum development process was presented and copies of the Draft Computer/Technology Skills Curriculum were provided at state-wide computer coordinators' meetings at the following conferences:

- North Carolina Educational Technology Conference - December 1996
- North Carolina Association for Educational Communications & Technology Conference - March 1997
- Camp Caraway retreat - July 1997
- North Carolina Educational Technology Conference - December 1997
- North Carolina Association for Educational Communications & Technology Conference - February 1998

The Computer Skills Curriculum Committee carefully reviewed input from focus group sessions and reworked and refined the language of the Computer/Technology Skills curriculum draft. A draft of the objectives by strand was mailed to system-level computer coordinators in June 1997. An in-depth analysis of the draft was conducted with technology leaders at the Camp Caraway retreat in early July, 1997. Objectives were rewritten and refined to address reactions and input from the group.

In November 1997 the entire committee reconvened to assemble and refine the complete document. Revisions were mailed to district-level technology leaders and community stakeholders in mid-November and a presentation was made to the state-wide computer coordinators' meeting at North Carolina Educational Technology Conference 1997.

In January 1998 six public hearings were conducted:

- Haywood County
- Richmond County
- Carteret County
- Charlotte/Mecklenburg
- Winston-Salem/Forsyth
- Wake County

On January 26, 1998 several members of the Computer Skills Curriculum Committee made a formal presentation of the draft to Instructional Services staff, who provided input and specific suggestions. Computer Skills Curriculum Committee met on January 30, 1998 to address issues and concerns and finalize the document.

STANDARD COURSE OF STUDY
K-12 Computer/Technology Skills

INTRODUCTION

> The strength of technology is that it provides an excellent platform where students can collect information in multiple formats and then organize, link, and discover relationships among facts and events. An array of tools for acquiring information and for thinking and expression allows more students more ways to enter the learning enterprise successfully and to live productive lives in the global, digital, and information-based future they all face.[1]

OVERVIEW

The ***K-12 Computer/Technology Skills Standard Course of Study*** identifies the essential knowledge and skills that all students need to be active, life-long learners in a technology intensive environment. Technology is undergoing rapid change and new and improved technological advances appear almost daily. The curriculum is designed to form the foundation for continuous learning and to be applicable to ever-changing innovations. Computer skills continue to be the primary focus of the curriculum but the title has been expanded to computer/technology skills to address multimedia and other areas beyond the computer alone.

The first separate ***Computer Skills Standard Course of Study*** was approved by the State Board of Education in 1992. This revision represents an expansion of the competencies to reflect current technologies but is also designed to incorporate future technological developments. With minor revisions, it has the same three goals as the *1992* ***Standard Course of Study*** which generally apply K-12:

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

This goal addresses the role of technology in all parts of society. Students must understand the impact of computer technology on society in a technology-based information rich world. Students must understand appropriate use of computer technology and exhibit ethical behavior in using hardware, software, and information accessing resources.

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

This goal is concerned with fundamental computer operations and application software use that make students independent, productive, users of computer technology. Students must master certain computer operations, application software skills, know computer terms and functions, demonstrate basic keyboarding skills, and be able to use software correctly.

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[1] Statham, Dawn S., and Torell, Clark R. *Computers in the Classroom: The Impact of Technology on Student Learning*, Boise State University College of Education, p. 10.

The application software skills identified include word processing, database management, spreadsheet problem-solving, multimedia production, and accessing information resources via telecommunications.

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

This goal focuses on the application of computer/technology skills access. Students will access information using search strategies and analyze information using database, spreadsheet, and graphing software. They will then communicate and share the results through desktop publications, multimedia productions, video-conferencing, and telecommunications with audiences near and far.

The objectives under each of the three goals in the revised ***K-12 Computer/Technology Skills Standard Course of Study*** describe the progressive development of knowledge and skills in six strands: Societal Issues, Database, Spreadsheet, Keyboard Utilization/Word Processing/Desktop Publishing, Multimedia/Presentation , and Telecommunications. In the primary grades, the objectives focus on the essential skills; in the upper elementary and middle grades, the objectives build upon those skills. During the eighth grade, students should be prepared to successfully pass the computer proficiency assessment required for graduation.

It is important to note, however, that they may not have acquired all of the keyboarding proficiency required as a prerequisite for workforce development courses. At grades 9-12, the ***Standard Course of Study*** focuses on the refinement and application of the acquired computer/technology skills in preparation for work, continued learning, and personal use. The objectives at these grade levels are organized by subject area, allowing students to employ, expand, and internalize the proficiencies that they have already developed.

PHILOSOPHY

As the 21st Century approaches, computers and other technologies are having greater influence on our daily lives–at home, at work, in the community, and in schools. Whether using word processing to complete a writing assignment, a spreadsheet to display mathematical data, telecommunications to find information for a research paper, e-mail to correspond with a pen pal in another country, or multimedia for a presentation, students must acquire the technological skills for tomorrow while meeting their needs today.

In 1995, the State Board of Education published ***The New ABCs' of Public Education***, its plan for restructuring education in our state. The B in the *ABC*s' focuses instruction on the basics–specifically the mastery of reading, mathematics, and writing. Computer/technology skills represent a new "basic". When integrated with the core curricular areas, these skills enable students to improve and enhance their learning of the other basic skills.[2]

The ***Computer/Technology Skills Standard Course of Study*** involves the development of skills over time. Computer/Technology Skills proficiency is not an end in itself, but lays a foundation for life-long learning. These skills become building blocks with which to meet the challenges of personal and professional life. To become technologically proficient, the student must develop the skills over time, through integrated activities in all content areas K-12, rather than through one specific course. These skills are necessary for all students and should be introduced and refined collaboratively by all K-12 teachers as an integral part of the learning process.

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[2] ***The New ABC's of Public Education***, May, 1995., p. 5

The proposed National Educational Technology Standards are designed to produce technology-literate students who master and integrate computer/technology skills into their personal learning and social structure throughout their education. These standards address the following basic principles and assumptions:

- Students acquire steadily increasing skills and knowledge related to the use of technology for enhancing personal and collaborative abilities.
- Students acquire steadily increasing ability to make quality decisions related to managing their own learning.
- Students acquire steadily increasing skills to work in collaboration with others, with hardware and software, information resources, and to solve problems with the support technology tools.
- Students become responsible citizens and users of technology and information.
- Students have access to current technology resources including telecommunications and multimedia enhancements.
- Students acquire skills that prepare the to learn new software and hardware technology and to adapt to complex technology environments that emerge in their lifetime.
- Students acquire skills that prepare them to learn new software and hardware technology and adapt to complex technology environments that emerge in their lifetime.[3]

The revised ***North Carolina Computer/Technology Skills Standard Course of Study*** complements the proposed national standards. Students meeting these competency goals and objectives should become:

- complex thinkers who use technology to define problems, gather data, analyze information, and interpret and evaluate results;
- effective communicators who use a variety of technologies to plan, develop, and present a product;
- self-directed learners who can independently use technology to meet present and future needs; and
- contributing citizens who understand the ethical issues and societal impact of advanced and emerging technologies.

Thus, the Computer/Technology Skills curriculum provides a foundation for enabling all students to meet technological challenges.

This document contains the Computer/Technology Skills goals and objectives by grade level, grade level strand guides, and a glossary.

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[3] ***The National Educational Technology Standards*** (NETS) Project is sponsored by the *International Society for Technology in Education* in cooperation with the U. S. Department of Education, the National Science Foundation and other national standards groups to be completed in 1998.

Standard Course of Study
K-12 Computer/Technology Skills

STRANDS: SI = Societal Issues; KU/WP/DTP = Keyboard Utilization/Word Processing/Desk Top Publishing; DB = Database; SS = Spreadsheet; T = Telecommunications; M/P = Multimedia/Presentation

GRADE LEVEL: KINDERGARTEN

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Identify the computer as a machine that helps people work and play. (SI)
1.2 Identify the physical components of a computer system. (SI)
1.3 Demonstrate respect for the work of others. (SI)
1.4 Demonstrate correct care and use of computers. (SI)
1.5 Identify word processing software as a tool for writing. (KU/WP/DTP)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Locate and use letters, numbers, and special keys on a keyboard. (KU/WP/DTP)
2.2 Place the cursor at a specified location. (KU/WP/DTP)
2.3 Identify items by different attributes using manipulatives and/or software. (SS)
2.4 Recognize the characteristics of multimedia. (M/P)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Group items by different attributes using manipulatives and/or software. (SS)
3.2 Arrange a picture story in sequential/linear order. (M/P)

Grade Level Focus Areas

- *Parts of the computer and how to operate*
- *Keyboard familiarity*
- *Grouping and sequencing*
- *Respect for the work of others*

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GRADE LEVEL: 1

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Identify uses of technology at home and at school. (SI)
1.2 Discuss ownership of computer-created work. (SI)
1.3 Identify physical components of a computer system. (SI)
1.4 Identify the Internet as a source of information. (T)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Identify and discuss fundamental computer terms. (SI)
2.2 Locate and use letters, numbers, and special keys on a keyboard. (KU/WP/DTP)
2.3 Identify basic word processing terms. (KU/WP/DTP)
2.4 Key words and/or sentences using word processing. (KU/WP/DTP)
2.5 Participate in the creation of a class multimedia sequential/linear story. (M/P)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Group items by different attributes using manipulatives and/or software. (SS)
3.2 Gather, organize, and display data. (SS)

Grade Level Focus Areas
- *Using technology at home and school*
- *Gathering, organizing, and displaying data*
- *Using word processing*
- *Exploring multimedia*

Standard Course of Study
K-12 Computer/Technology Skills

STRANDS: SI = Societal Issues; KU/WP/DTP = Keyboard Utilization/Word Processing/Desk Top Publishing; DB = Database; SS = Spreadsheet; T = Telecommunications; M/P = Multimedia/Presentation

GRADE LEVEL: 2

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Identify uses of technology in the community. (SI)
1.2 Recognize an individual's rights of ownership to computer-generated work. (SI)
1.3 Identify how electronic databases are used in the school, neighborhood, and community. (DB)
1.4 Identify print and electronic databases as ways to collect, organize, and display data. (DB)
1.5 Identify how telecommunications has changed the ways people work and play. (T)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Identify essential computer terms. (SI)
2.2 Identify the function of physical components of a computer system. (SI)
2.3 Demonstrate correct finger placement for home row keys. (KU/WP/DTP)
2.4 Use word processing to enter, save, print, and retrieve text. (KU/WP/DTP)
2.5 Use electronic databases to locate information. (DB)
2.6 Use a graphing program to enter data and graph the results. (SS)
2.7 Identify and use electronic drawing tools to combine graphics and text. (M/P)
2.8 Participate in the planning and creation of a class multimedia story which includes student narration. (M/P)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Collect, sort, and organize information to display as a graph or chart. (SS)
3.2 Interpret data on charts/graphs and make predictions. (SS)

Grade Level Focus Areas

- *Using technology in the community*
- *Using electronic database to locate information*
- *Building word processing skills*
- *Collecting, sorting, and displaying data*
- *Exploring multimedia (graphics, sound, text)*
- *Using drawing tools*

STRANDS: SI = Societal Issues; KU/WP/DTP = Keyboard Utilization/Word Processing/Desk Top Publishing; DB = Database; SS = Spreadsheet; T = Telecommunications; M/P = Multimedia/Presentation

GRADE LEVEL: 3

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Identify uses of technology in the community and how it has changed people's lives. (SI)
1.2 Recognize that the Copyright Law protects what a person, group, or company has created. (SI)
1.3 Recognize the benefits of word processing. (KU/WP/DTP)
1.4 Recognize how electronic databases are used in the community. (DB)
1.5 Identify telecommunications technologies used to locate information. (T)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Identify the technology tools used to collect, analyze, and display data. (SI)
2.2 Identify the physical components of a computer system as either input, output, or processing devices. (SI)
2.3 Demonstrate proper keyboarding techniques for upper and lower case letters. (KU/WP/DTP)
2.4 Retrieve and edit a word processed document. (KU/WP/DTP)
2.5 Recognize the differences between print and electronic databases. (DB)
2.6 Identify the parts of a spreadsheet. (SS)
2.7 Enter and edit data in a prepared spreadsheet and observe the results. (SS)
2.8 Create a multiple-outcome storyboard as a class activity. (M/P)
2.9 Identify the difference between linear and nonlinear multimedia presentations. (M/P)
2.10 Create a multimedia project as a group/class activity. (M/P)
2.11 Use telecommunications to locate community information as a group/class project. (T)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Create, save, and print a word processed document. (KU/WP/DTP)
3.2 Locate and use information in electronic databases. (DB)
3.3 Use a prepared spreadsheet to enter and graph data as a group activity. (SS)
3.4 Evaluate the usefulness of information obtained using telecommunication technologies. (T)

Grade Level Focus Areas
- *Awareness of Copyright Law*
- *Exploring information technologies*
- *Building word processing techniques*
- *Exploring spreadsheets*

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GRADE LEVEL: 4

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Identify the ways in which technology has changed the lives of people in North Carolina. (SI)
1.2 Identify and understand the differences between non-networked and networked computers. (SI)
1.3 Identify violations of the Copyright Law. (SI)
1.4 Recognize the correct use of copyrighted materials in multimedia products. (M/P)
1.5 Identify the need for Acceptable Use Policies (AUP). (SI)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Use technology tools used to collect, analyze, and display data. (SI)
2.2 Practice proper keyboarding techniques for upper and lower case letters. (KU/WP/DTP)
2.3 Recognize word processing terms and functions. (KU/WP/DTP)
2.4 Edit a word processing file to make indicated corrections. (KU/WP/DTP)
2.5 Define the parts of a database. (DB)
2.6 Develop a simple database and enter and edit information as a class activity. (DB)
2.7 Define spreadsheet terms. (SS)
2.8 Enter data into a prepared spreadsheet to perform calculations (+,-,*,/) and recognize the changes that occur. (SS)
2.9 Use e-mail as a means of communications. (T)
2.10 Use search strategies to locate information electronically. (T)
2.11 Recognize the differences between non-networked and networked computers. (SI)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Create, format, save, and print a word processed document. (KU/WP/DTP)
3.2 Search and sort prepared databases for information to use in classroom projects. (DB)
3.3 Create a table/graph from spreadsheet data. (SS)
3.4 Create a multimedia project and cite sources of copyrighted material. (M/P)
3.5 Evaluate information found via telecommunications for content and usefulness. (T)

Grade Level Focus Areas
- *Using databases*
- *Using spreadsheets*
- *Locating information on the Internet*
- *Evaluating information found through telecommunications*
- *Developing word processing documents*
- *Exploring e-mail*
- *Identifying ways technology has changed North Carolina*

Standard Course of Study
K-12 Computer/Technology Skills

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GRADE LEVEL: 5

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Recognize the influence of technology on life in the United States. (SI)
1.2 Recognize the need for protection of software and hardware from computer viruses and vandalism. (SI)
1.3 Recognize video Conferencing as a method of interactive communication. (T)
1.4 Describe the use of Acceptable Use Policy (AUP). (SI)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Use technology tools to collect, analyze, and display data. (SI)
2.2 Explain the differences between a non-networked and networked computer. (SI)
2.3 Use keyboarding skills to improve speed and accuracy. (KU/WP/DTP)
2.4 Use a word processing application to create and format a document. (KU/WP/DTP)
2.5 Create/modify an electronic database. (DB)
2.6 Search and sort information using one criterion. (DB)
2.7 Add and delete records in a database. (DB)
2.8 Create/modify and use spreadsheets to perform calculations (+,-,*, /). (SS)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Create a product using information located in a database. (DB)
3.2 Evaluate the accuracy, credibility, and validity of data in a database. (DB)
3.3 Select search strategies to obtain information. (DB)
3.4 Select the most appropriate graph to display data and state reason. (SS)
3.5 Create modify a multimedia presentation citing sources of copyrighted materials. (M/P)
3.6 Participate in curriculum-based telecommunications projects as a class activity. (T)
3.7 Evaluate information found via telecommunications for appropriateness, content, and usefulness. (T)

Grade Level Focus Areas
- *Using search strategies*
- *Exploring the need for protection against viruses and vandalism*
- *Participating in curriculum-based telecommunication projects*
- *Developing word processing document using proper keyboarding techniques*
- *Developing multimedia presentation citing sources*
- *Developing a product using a database*

Standard Course of Study
K-12 Computer/Technology Skills

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GRADE LEVEL: 6

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Recognize ownership, security, and privacy issues. (SI)
1.2 Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (SI)
1.3 Model ethical behavior relating to security, privacy, passwords, and personal information. (SI)
1.4 Identify uses of technology in the workplace. (SI)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Use keyboarding skills to increase productivity and accuracy. (KU/WP/DTP)
2.2 Create/modify a database relevant to classroom assignments. (DB)
2.3 Search and sort information using more than one criterion and explain strategies used to locate information. (DB)
2.4 Enter and edit data into a prepared spreadsheet to test simple "what if" statements. (SS)
2.5 Use order of operations in spreadsheet formulas. (SS)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Select and use technology tools to collect, analyze, and display data. (SI)
3.2 Use word processing/desktop publishing applications to create documents related to content areas. (KU/WP/DTP)
3.3 Use information located in database files to create/modify a personal product. (DB)
3.4 Create/modify and use spreadsheets to solve real-world problems. (SS)
3.5 Select most appropriate type of graph to display data and state the reason. (SS)
3.6 Create nonlinear multimedia projects related to content areas. (M/P)
3.7 Evaluate electronic information from various sources as to validity, appropriateness, content, and usefulness. (T)
3.8 Apply search strategies to locate and retrieve information via telecommunications. (T)
3.9 Use telecommunications to share and publish information. (T)

Grade Level Focus Areas

- *Refining application skills*
- *Using formulas in a spreadsheet*
- *Using search strategy with more than one factor in a database*
- *Increasing productivity and accuracy in keyboarding*
- *Using word processing, spreadsheet, database, and multimedia for assignments in all subject areas*
- *Locating and retrieving information using telecommunications*

Standard Course of Study
K-12 Computer/Technology Skills

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GRADE LEVEL: 7

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Demonstrate ethical behavior relating to security, privacy, passwords, and personal information. (SI)
1.2 Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (SI)
1.3 Describe the impact of technology on the skills needed for the workplace.(SI)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Enter and edit data into a prepared spreadsheet to test simple "what if" statements. (SS)
2.2 Select appropriate spreadsheet functions to solve problems. (SS)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Select and use technology tools to collect, analyze, and display data. (SI)
3.2 Use word processing/desktop publishing for assignments/projects. (KU/WP/DTP))
3.3 Research, create, publish, and present projects related to content areas using a variety of technological tools. (KU/WP/DTP/DB/SS/MM/T)
3.4 Search and sort information using more than one criterion and explain strategies used to find information. (DB)
3.5 Create/modify and use a database relevant to a classroom assignment. (DB)
3.6 Create/modify and use spreadsheets to solve problems related to content areas. (SS)
3.7 Choose charts/tables or graphs to best represent data and state reason. (SS)
3.8 Evaluate the information from electronic sources as to validity, appropriateness, content, and usefulness. (T)

Grade Level Focus Areas

- *Using ethical behavior in the use of technology resources*
- *Using appropriate spreadsheet functions to solve problems related to content areas*
- *Selecting and using technology tools to collect, analyze, and display data*
- *Using a variety of technological tools to develop projects in content areas*

Standard Course of Study
K-12 Computer/Technology Skills

STRANDS: SI = Societal Issues; KU/WP/DTP = Keyboard Utilization/Word Processing/Desk Top Publishing; DB = Database; SS = Spreadsheet; T = Telecommunications; M/P = Multimedia/Presentation

GRADE LEVEL: 8

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

1.1 Model ethical behavior relating to security, privacy, passwords, and personal information. (SI)
1.2 Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (SI)
1.3 Investigate occupations dependent on technology.(SI)

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

2.1 Create/modify and print a database report. (DB)

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

3.1 Select and use technology tools to collect, analyze, and display data. (SI)
3.2 Use word processing/desktop publishing for assignments/projects. (KU/WP/DTP))
3.3 Research, create, publish, and present projects related to content areas using a variety of technological tools. (KU/WP/DTP/DB/SS/MM/T)
3.4 Create/modify and use databases relevant to classroom assignments. (DB)
3.5 Apply search and sort strategies used in a database. (DB)
3.6 Create/modify and use spreadsheets to solve problems related to content areas. (SS)
3.7 Explain the rationale for choosing charts/tables or graphs to best represent data. (SS)
3.8 Use spreadsheets to explore various formulas/functions and relationships. (SS)
3.9 Conduct online research and evaluate the information found as to the validity, appropriateness, content, and usefulness. (T)

Grade Level Focus Areas

- *Using spreadsheets and databases relevant to classroom assignments*
- *Choosing charts/tables or graphs to best represent data*
- *Conducting online research and evaluating the information found*
- *Using word processing/desktop publishing for classroom assignments/projects*
- *Using a variety of technological tools to develop projects in content areas*

GRADE LEVEL 9-12

Subject Area Objectives

COMPETENCY GOAL 1: **The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.**

1.1 Practice ethical behavior in using computer-based technology for class assignments and projects.
1.2 Identify issues surrounding complex technology environments.

COMPETENCY GOAL 2: **The learner will demonstrate knowledge and skills in the use of computer and other technologies.**

2.1 Practice and refine knowledge and skills in keyboarding/word processing/desktop publishing, spreadsheets, databases, multimedia, and telecommunications in preparing classroom assignments and projects.
2.2 Select and use appropriate technology tools to efficiently collect, analyze, and display data.

COMPETENCY GOAL 3: **The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.**

Arts Education (Dance, Music, Theatre Arts, Visual Arts)
3.1 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
3.2 Select and use appropriate technologies as a means of artistic expression.
3.3 Use electronic resources for research.
3.4 Use technological tools for class assignments, projects, and presentations.
3.5 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

English
3.1 Use word processing and/or desktop publishing for a variety of writing assignments/projects.
3.2 Use electronic resources for research.
3.3 Select and use technological tools for class assignments, projects, and presentations.
3.4 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Foreign Languages
3.1 Select and use appropriate technologies to communicate in other languages with other cultures.
3.2 Select and use technological tools for class assignments, projects, and presentations.
3.3 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Health/Physical Education

3.1 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
3.2 Use technology for experiments and/or research.
3.3 Use electronic resources for research.
3.4 Select and use technological tools for class assignments, projects, and presentations.
3.5 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Mathematics

3.1 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
3.2 Use spreadsheets to solve problems and display data.
3.3 Use a calculator, scientific calculator, or graphing calculator for problem-solving.
3.4 Select and use technological tools for class assignments, projects, and presentations.
3.5 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Science

3.1 Use scientific instruments to perform experiments.
3.2 Use appropriate technology tools to efficiently collect, analyze, and display data.
3.3 Use electronic resources for research.
3.4 Use spreadsheets and/or databases to collect, record, analyze, and present data.
3.5 Select and use technology tools for class presentations.
3.6 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Social Studies

3.1 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
3.2 Use databases to collect, record, analyze, and display data.
3.3 Use electronic resources for research.
3.4 Select and use technological tools for class assignments, projects, and presentations.
3.5 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Workforce Development (Agricultural Education, Business and Marketing, Industrial Technology and Human Services, Biotechnology, Health Care, and Career Development)

3.1 Select and use appropriate technologies to prepare for the workplace.
3.2 Use electronic resources for research.
3.3 Select and use technological tools for class assignments, projects, and presentations.
3.4 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Kindergarten Objectives

The student will...

Societal Issues	**Databases**	**Spreadsheet**	**Keyboard Utilization/Word Processing/DTP**	**Multimedia/ Presentation**	**Telecommunications**
1.1...Identify the computer as a machine that helps people work and play. (G1) 1.2...Identify the physical components of a computer system (G1) 1.3...Demonstrate respect for the work of others. (G1) 1.4...Demonstrate correct care and use of computers. (G1)		2.3...Identify items by different attributes using manipulatives and/or software. (G2) 3.1...Group items by different attributes using manipulatives and/or software. (G3)	1.5...Identify word processing software as a tool for writing. (G1) 2.1...Locate and use letters, numbers, and special keys on a keyboard. (G2) 2.2...Place the cursor at a specified location. (G2)	2.4...Recognize the characteristics of multimedia. (G2) 3.2...Arrange a picture story in sequential/linear order. (G3)	

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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1st Grade Objectives

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1...Identify uses of technology at home and at school. (G1) 1.2...Discuss ownership of computer-created work. (G1) 1.3...Identify physical components of a computer system. (G1) 2.1...Identify and discuss fundamental computer terms. (G2)		3.1...Group items by different attributes using manipulatives and/or software. (G3) 3.2...Gather, organize, and display data. (G3)	2.2...Locate and use letters, numbers, and special keys on a keyboard. (G2) 2.3...Identify basic word processing terms. (G2) 2.4...Key words and/or sentences using word processing. (G2)	2.5...Participate in the creation of a class multimedia sequential/linear story. (G2)	1.4...Identify the Internet as a source of information. (G1)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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2nd Grade Objectives

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1...Identify uses of technology in the community. (G1) 1.2...Recognize an individual's rights of ownership to computer-generated work. (G1) 2.1...Identify essential computer terms. (G2) 2.2...Identify the function of physical components of a computer system. (G2)	1.3...Identify how electronic databases are used in the school, neighborhood, and community. (G1) 1.4...Identify print and electronic databases as ways to collect, organize, and display data. (G1) 2.5...Use electronic databases to locate information. (G2)	2.6...Use a graphing program to enter data and graph the results. (G2) 3.1...Collect, sort, and organize information to display as a graph or chart. (G3) 3.2...Interpret data on charts/graphs and make predictions. (G3)	2.3...Demonstrate correct finger placement for home row keys. (G2) 2.4...Use word processing to enter, save, print, and retrieve text (G2)	2.7...Identify and use electronic drawing tools to combine graphics and text. (G2) 2.8...Participate in the planning and creation of a class multimedia story which includes student narration. (G2)	1.5...Identify how telecommunications has changed the ways people work and play. (G1)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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Grade Level Strand Guide Grade 3

3rd Grade Objectives.

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1...Identify uses of technology in the community and how it has changed people's lives. (G1) 1.2...Recognize that the Copyright Law protects what a person, group, or a company has created. (G1) 2.1...Identify the technology tools used to collect, analyze, and display data. (G2) 2.2...Identify the physical components of a computer system as either input, output, or processing devices. (G2)	1.4...Recognize how electronic databases are used in the community. (G1) 2.5...Recognize the differences between print and electronic databases. (G2) 3.2...Locate and use information in electronic databases. (G3)	2.6...Identify the parts of a spreadsheet. (G2) 2.7...Enter and edit data in a prepared spreadsheet and observe the results. (G2) 3.3...Use a prepared spreadsheet to enter and graph data as a group activity. (G3)	1.3...Recognize the benefits of word processing. (G1) 2.3...Demonstrate proper keyboarding techniques for upper and lowercase letters. (G2) 2.4...Retrieve and edit a word processed document.(G2) 3.1...Create, save, and print a word processed document. (G3)	2.8...Create a multiple-outcome storyboard as a class activity. (G2) 2.9...Identify the difference between linear and nonlinear multimedia presentations. (G2) 2.10...Create a multimedia project as a group/class activity. (G2)	1.5...Identify telecommunications technologies used to locate information. (G1) 2.11...Use telecommunications to locate community information as a group/class project. (G2) 3.4...Evaluate the usefulness of information obtained using telecommunication technologies. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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4th Grade Objectives

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1…Identify the ways in which technology has changed the lives of people in North Carolina. (G1) 1.2…Identify the differences between non-networked and networked computers. (G1) 1.3…Identify violations of the Copyright Law. (G1) 1.5…Identify the need for Acceptable Use Policies (AUP). (G1) 2.11…Recognize the differences between non-networked and networked computers. (G2)	2.5…Define the parts of a database. (G2) 2.6…Develop a simple database and enter and edit information as a class activity. (G2) 3.2…Search and sort prepared databases for information to use in classroom projects. (G3)	2.1…Use technology tools used to collect, analyze, and display data. (G2) 2.7…Define spreadsheet terms. (G2) 2.8…Enter data into a prepared spreadsheet to perform calculations and recognize the changes that occur.(+,-,*,/) (G2) 3.3…Create a table/graph from spreadsheet data. (G3)	2.2…Practice proper keyboarding techniques for upper and lower case letters. (G2) 2.3…Recognize word processing terms and functions. (G2) 2.4…Edit a word processing file to make indicated corrections. (G2) 3.1…Create, format, save and print a word processed document. (G3)	1.4…Recognize the correct use of copyrighted materials in multimedia products. (G1) 3.4…Create modify a multimedia project and cite sources of copyrighted material. (G3)	2.9…Use e-mail as a means of communications. (G2) 2.10…Use search strategies to locate information electronically. (G2) 3.5…Evaluate information found via telecommunications for content and usefulness. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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5th Grade Objectives

The student will...

Societal Issues	**Databases**	**Spreadsheet**	**Keyboard Utilization/Word Processing/DTP**	**Multimedia/ Presentation**	**Telecommunications**
1.1...Recognize the influence of technology on life in the United States. (G1) 1.2...Recognize the need for protection of software and hardware from computer viruses and vandalism. (G1) 1.4...Describe the use of Acceptable Use Policy (AUP). (G1) 2.2...Explain the differences between a non-networked and networked computer. (G2)	2.5...Create/modify an electronic database. (G2) 2.6...Search and sort information using one criterion. (G2) 2.7...Add and delete records in a database. (G2) 3.1...Create a product using information located in a database. (G3) 3.2...Evaluate the accuracy, credibility, and validity of data in a database. (G3) 3.3...Select search strategies to obtain information. (G3)	2.1...Use technology tools to collect, analyze, and display data. (G2) 2.8...Create/modify and use spreadsheets to perform calculations (+,-,*, /). (G2) 3.4...Select the most appropriate graph to display data and state reason. (G3)	2.3...Use keyboarding skills to improve speed and accuracy. (G2) 2.4...Use a word processing application to create and format a document. (G2)	3.5...Create a multimedia presentation citing sources of copyrighted materials. (G3)	1.3...Recognize video Conferencing as a method of interactive communication. (G1) 3.6...Participate in curriculum-based telecommunications projects as a class activity. (G3) 3.7...Evaluate information found via telecommunications for appropriateness, content, and usefulness. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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6th Grade Objectives

The student will...

Societal Issues	**Databases**	**Spreadsheet**	**Keyboard Utilization/Word Processing/DTP**	**Multimedia/ Presentation**	**Telecommunications**
1.1…Recognize ownership, security, and privacy of information. (G1) 1.2… Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1) 1.3…Model ethical behavior relating to security, privacy, passwords, and personal information. (G1) 1.4…Identify uses of technology in the workplace. (G1) 3.1…Select and use technology tools to collect, analyze, and display data. (G3)	2.2…Create/modify a database relevant to classroom assignments. (G2) 2.3…Search and sort information using more than one criterion and explain strategies used to locate information. (G2) 3.3…Use information located in database files to create/modify a personal product. (G3)	2.4…Enter and edit data into a prepared spreadsheet to test simple "what if" statements. (G2) 2.5…Use order of operations in spreadsheet formulas. (G2) 3.4…Create/modify and use spreadsheets to solve real-world problems. (G3) 3.5…Select most appropriate type of graph to display data and state the reason. (G3)	2.1…Use keyboarding skills to increase productivity and accuracy. (G2) 3.2…Use word processing/desktop publishing applications to create documents related to content areas. (G3)	3.6…Create nonlinear multimedia projects related to content areas. (G3)	3.7…Evaluate electronic information from various sources as to validity, appropriateness, content, and usefulness. (G3) 3.8…Apply search strategies to locate and retrieve information via telecommunications. (G3) 3.9…Use telecommunications to share and publish information. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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7th Grade Objectives

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1…Demonstrate ethical behavior relating to security, privacy, passwords, and personal information. (G1) 1.2… Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1) 1.3…Describe the impact of technology on the skills needed for the workplace.(G1) 3.1…Select and use technology tools to collect, analyze, and display data. (G3)	3.4…Search and sort information using more than one criterion and explain strategies used to find information. (G3) 3.5…Create/modify and use a database relevant to a classroom assignment. (G3)	2.1…Enter and edit data into a prepared spreadsheet to test simple "what if" statements. (G2) 2.2…Select appropriate spreadsheet functions to solve problems. (G2) 3.6…Create/modify and use spreadsheets to solve problems related to content areas. (G3) 3.7…Choose charts/tables or graphs to best represent data and state reason. (G3)	3.2…Use word processing/desktop publishing for assignments/projects. (G3)	3.3…Research, create, publish, and present projects related to content areas using a variety of technological tools. (G3)	3.8…Evaluate the information from electronic sources as to validity, appropriateness, content, and usefulness. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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8th Grade Objectives

The student will...

Societal Issues	Databases	Spreadsheet	Keyboard Utilization/Word Processing/DTP	Multimedia/ Presentation	Telecommunications
1.1... Model ethical behavior relating to security, privacy, passwords, and personal information. (G1) 1.2... Demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1) 1.3...Investigate occupations dependent on technology.(G1) 3.1...Select and use technology tools to collect, analyze, and display data. (G3)	2.1...Create/modify and print a database report. (G2) 3.4...Create/modify and use databases relevant to classroom assignments. (G3) 3.5...Apply search and sort strategies used in a database. (G3)	3.6...Create/modify and use spreadsheets to solve problems related to content areas . (G3) 3.7...Explain the rationale for choosing charts/tables or graphs to best represent data. (G3) 3.8...Use spreadsheets to explore various formulas/functions and relationships. (G3)	3.2...Use word processing/desktop publishing for assignments/projects. (G3)	3.3...Research, create, publish, and present projects related to content areas using a variety of technological tools. (G3)	3.9...Conduct online research and evaluate the information found as to the validity, appropriateness, content and usefulness. (G3)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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Grades 9-12

Subject Area Objectives

The student will...

ALL SUBJECT AREAS

1.1...Practice ethical behavior in using computer-based technology for class assignments and projects. (G1)
1.2...Identify issues surrounding complex technology environments. (G1)
2.1...Practice and refine knowledge and skills in keyboarding/word processing/desktop publishing, spreadsheets, databases, multimedia and telecommunications in preparing classroom assignments and projects. (G2)
2.2...Select and use appropriate technology tools to efficiently collect, analyze, and display data. (G2)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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Grades 9-12

Subject Area Objectives

The student will...

Arts Education (Dance, Music, Theatre Arts, Visual Arts)	English	Foreign Language	Health/Physical Education
3.1...Select and use appropriate technology tools to efficiently collect, analyze, and display data. (G3) 3.2...Select and use appropriate technologies as a means of artistic expression. (G3) 3.3...Use electronic resources for research. (G3) 3.4...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.5... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)	3.1...Use word processing and/or desktop publishing for a variety of writing assignments/projects. (G3) 3.2...Use electronic resources for research. (G3) 3.3...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.4... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations (G1)	3.1...Select and use appropriate technologies to communicate in other languages with other cultures. (G3) 3.2...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.3... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)	3.1...Select and use appropriate technology tools to efficiently collect, analyze, and display data. (G3) 3.2...Use technology for experiments and/or research. (G3) 3.3...Use electronic resources for research. 3.4...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.5... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

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Grades 9-12

Subject Area Objectives

The student will...

Mathematics	Science	Social Studies	Workforce Development (Agriculture, Business, Technology, Health)
3.1...Select and use appropriate technology tools to efficiently collect, analyze, and display data. (G3) 3.2...Use spreadsheets to solve problems and display data. (G3) 3.3...Use a calculator, scientific calculator or graphing calculator for problem-solving. (G3) 3.4...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.5... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)	3.1...Use scientific instruments to perform experiments. (G3) 3.2...Use appropriate technology tools to efficiently collect, analyze, and display data. (G3) 3.3...Use electronic resources for research. (G3) 3.4...Use spreadsheets and/or databases to collect, record, analyze, and present data. (G3) 3.5... Select and use technological tools for class assignments, projects, and presentations. (G3) 3.6... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)	3.1...Select and use appropriate technology tools to efficiently collect, analyze, and display data. (G3) 3.2...Use databases to collect, record, analyze and display data. (G3) 3.3...Use electronic resources for research. (G3) 3.4...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.5... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)	3.1...Select and use appropriate technologies to prepare for the workplace. (G3) 3.2...Use electronic resources for research. (G3) 3.3...Select and use technological tools for class assignments, projects, and presentations. (G3) 3.4... Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations. (G1)

Goal 1=(G1)
Goal 2=(G2)
Goal 3=(G3)

Computer/Technology Standard Course of Study
Glossary

Acceptable Use Policy (AUP)
Policies adopted by school districts to address Internet usage. Acceptable Use Policy (AUP) is an agreement between the user (students and/or teachers) and the school and/or school district requiring responsible use of Internet access. Typically AUP agreements are signed for students by their parent(s) or guardian.

chart/graph
Provide a pictorial representation of data, making it easy to see significant trends, for example. Today, spreadsheet programs are often used to create the following types of graphs: bar, area, line, scatter, pie, stacked bar, and stacked area.

computer
An electronic machine that can perform calculations and can process a large amount of information accurately and much more rapidly than the human brain.

computer vandalism
Act of damaging, altering, or destroying a computer, computer-peripherals, computer software or computer service.

computer virus
A computer program that can reproduce by changing other programs to include a copy of itself. It is a parasite program, needing another program to survive.

Copyright Law
Law granting a legal right to a copyright holder which requires the permission of the copyright holder to make non-archival copies of the work in question.

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Computer/Technology Standard Course of Study
Glossary

copyrighted material
Material protected by copyright laws.

cursor
A highlighted or bright (sometimes blinking) line or mark that shows where information is being input; that is, where the next letter or character will appear. Sometimes the cursor is a special picture or icon.

data
A general term for pieces of information that a computer processes.

database
A collection of data organized for search and retrieval. Electronic databases are accessed by computer; print databases are available in printed format.

desktop publishing application
A computerized layout program that integrates graphics and text to produce a professional looking document.

document
The file that is created or modified with an application. Examples are a letter, a drawing, or a mailing list.

Computer/Technology Standard Course of Study
Glossary

drawing tools
Tools found in a drawing or painting program, used to draw lines, rectangles, ovals, arcs, and polygons.

e-mail
Private messages, called electronic mail, that are sent and received over a computer network.

electronic database
a collection of data organized for search and retrieval. Electronic databases are accessed by computer. Examples: CD-ROM encyclopedia, SIRS,

electronic information
Disk based information for onscreen use.

emerging technologies
Technologies that are in the developmental stages, not in widespread use, or have not been invented yet

enter
To type an item of information into a field in a database, or to type text into a document.

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Computer/Technology Standard Course of Study
Glossary

ethical issues
Issues conforming to accepted professional standards of conduct.

Fair Use and Multimedia Guidelines
The fair use doctrine provides educators with the right to make reasonable copies of copyrighted materials without specific consent of the author for purposes of criticism, comment, news reporting, teaching, scholarship, or research. The guidelines permit the use of copyrighted works in teaching, if certain factors are considered, including: • the purpose and character of the use, e.g., commercial vs. educational • the nature of the copyrighted work • the amount of the work copied in relation to the work as a whole • the effect of use on the potential market for, or value of the work.

format
Controls the overall appearance of a document, including margins, text size, style and font, headers, and footers.

formula
A type of information that can be entered into a spreadsheet cell. It is a mathematical equation consisting of numbers, other cell designators, and symbols for mathematical operations. The result of the formula is displayed in the cell that holds the formula.

function
A built-in formula that enables the user to perform complex calculations. Examples: SUM, AVERAGE, MIN

graphics
The display of pictures, shapes, and colors to convey information.

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Computer/Technology Standard Course of Study
Glossary

hardware
The physical equipment of a computer, such as the monitor, the keyboard, the Central Processing Unit, the printer, and the storage devices.

home row keys
The starting point for your hands when beginning to keyboard using common keying techniques. The keys on the keyboard *a, s, d, f, j, k, l, and ;* are home row keys.

input
1. The process of entering information into a computer.
2. The information entered or put into a computer for processing.

intellectual property
Ideas put into action, such as writing, music, art, computer code, and inventions, that can be protected under copyright or patent laws.

Internet
A global network of thousands of other computer networks that offers e-mail and information retrieval services to millions of people.

keyboard
An input device resembling a typewriter and consisting of a standardized layout of buttons or keys with symbols, such as letters or numbers, that can be entered into a computer by pressing on the keys.

Computer/Technology Standard Course of Study
Glossary

keyboard familiarity
The act of developing knowledge about the location of keys on the computer keyboard and the functions of these keys.

local area network (LAN)
A group of computers, connected by cables, set up to communicate with one another.

modem
A device that permits a computer to transmit and receive data over a telephone line.

multimedia
Any presentation or program that combines several media, such as graphics, sound, video, animation, and/or text.

multimedia sequential/linear story
A story or presentation where each event occurs in sequence. To move from one part of the presentation to another, the user steps through the presentation, either forwards or backwards, one event/page at a time.

multiple outcome storyboard
Based on a choice of values listed in a box on a storyboard, different events occur.

Computer/Technology Standard Course of Study
Glossary

networked computers
A system of computers linked together to share data, software, and hardware.

non-networked computers
Also called stand alone computers. The computers are not linked to other computers. To utilize resources such as printers, modems, scanners etc., each computer requires its own devices.

nonlinear
Not in order by time or event. Events may occur in any sequence.

online research
Research that utilizes primary and secondary electronic resources such as CD-ROM, intranet, and internet encyclopedias, dictionaries, databases, video conferencing, email, etc.

order of operations
The order in which a mathematical expression is evaluated. Expressions are evaluated from left to right in the following order: parentheses, exponents/powers, multiplication and division, addition and subtraction.

output
1) The process of displaying, printing, or storing information produced by a computer.
2) The information produced by a computer, as a result of processing, that is sent to devices that display, print, or store it.

Computer/Technology Standard Course of Study
Glossary

ownership of information
See Copyright Laws

parts of a database
A database is a group of records that contain fields of information.
record: a collection or listing of related categories or fields in a database file.

field: an item of information or data in a record of a database file.

password
A secret word or phrase used to access information stored on a computer or computer network.

prepared document
A computer document or file that has been previously created, usually for a specific purpose. Prepared documents can be used to find, edit, or manipulate information.

Presentation
An oral report that may include audio, text, graphics and the use of a presentation software application.

print
1. A mark or impression made upon a surface by pressure or other means.
2. To send information to a printer.
3. Published form.

print database
A collection of printed data organized for search and retrieval. Examples: telephone book, encyclopedia, address book.

privacy of information
The privacy protection is both a personal and fundamental right of all individuals. Individuals have a right to expect that organizations will keep personal information confidential. One way to ensure this is to require that organizations will collect, maintain, use, and disseminate identifiable personal information and data only as necessary to carry out their functions. In the United States the Federal privacy policy is guided by two key legislations:
Freedom of Information Act of 1966 and The Privacy Act of 1974.

processing devices
Devices that manipulate data in accordance with the instructions of the computer or a program. The main component, the central processing unit (CPU) or "brain" of a computer. It is the chip that performs all the information processing. The piece of hardware that contains the CPU is often called the CPU, or system unit.

relationship
The comparison of two pieces of information using logical operators. (<,>,<>,=, ≥, ≤).

retrieve
To find and bring back information that has previously been stored on a disk or hard drive. To load a file from a disk or hard drive.

save
A software feature used to save data on a hard drive or floppy disk.

Computer/Technology Standard Course of Study
Glossary

search

The process of finding all records of a database that meet a certain rule, statement, or criterion. A search may be based on a single statement, rule, or criterion, or a combination of statements, rules, and criteria joined by "and'" and "or". This process is also called find, query, or match in some database software.

security of information

The practice of not sharing how to access information stored on a computer or computer network. The use of passwords or security services such as encryption to keep unauthorized individuals from gaining access to information stored on a computer or computer network.

sequential/linear order

To arrange pictures, events, words, etc. in the order in which they occur over time.

societal impact of technology

The effect that technology has on local, state, national, or international affairs over a period of time.

software

Computer programs that tell a computer what to do; instructions to the CPU to tell it what to do with the data it receives.

sort

A process of organizing the records in a database in a specific order, either alphabetically (from A to Z or reverse alphabetically from Z to A) or numerically (from 0 to 9 or reverse numerically from 9 to 0).

Computer/Technology Standard Course of Study
Glossary

spreadsheet

1. A software program that is used to process financial or mathematical information.
2. Organizing information in rows and columns to form a table.

spreadsheet terms/parts of a spreadsheet

A spreadsheet is a table of information arranged in rows and columns. Information arranged horizontally is called a row; information arranged vertically is called a column. The box formed where a row and column meet is called a cell. Each cell contains data.

storyboard

A graphic organizer for planning a multimedia presentation. The contents, layout, and formatting of each card/page/slide and the linking together of the pages/cards/slides is determined prior to using the applications software.

table/graph

A visual display of information or data that is organized in a table, consisting of rows and columns. Examples: bus schedule, classroom seating chart, multiplication table.

technology

Technology is not an independent science, having a set of doctrines of its own, but consists of applications of the principles established in the various physical sciences (chemistry, mechanics, mineralogy, etc.) to manufacturing processes. –Internat. Cyc. 1: the practical application of science to commerce or industry 2: the discipline dealing with the art or science of applying scientific knowledge to practical problems {applied science) e.g., computers, digital cameras, scanners modems, networks, data video projectors, voice digitizers/synthesizers, touch screens joysticks/controllers, MIDI interfaces, probe ware.

telecommunications

The act of sending and receiving information electronically between two or more computers via modem and phone line or local area networks (LAN). The exchange of information can be within a building or around the globe.

Computer/Technology Standard Course of Study
Glossary

text
The actual structure of words in a piece of writing or printing.

video conferencing
Using cameras and phone lines or the internet allowing individuals at two or more sites to see and hear each other and to share and collaborate on graphical and text based data.

"what if" statements
The process of entering various sets of data into a spreadsheet to compare the results in order to analyze data and answer a question.

word processing
A process using a computer to create, edit, and print documents; a computer application that resembles typewriting but allows instant correction of errors, moving text to different locations, and other editing features.

ENGLISH
LANGUAGE
ARTS

Standard Course of Study and Grade Level Competencies

K-12

ENGLISH LANGUAGE
ARTS

Public Schools of North Carolina
Department of Public Instruction

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English Language Arts

(COMMUNICATION SKILLS)

Introduction

The ***North Carolina Standard Course of Study for English Language Arts*** is designed to assist educators in planning, developing, and implementing English Language Arts programs. The English Language Arts curriculum is spiraling and contains the same four goals for kindergarten through grade twelve. However, different competencies related to these goals for the various grade spans are described in the **Grade Level Competencies** section of this document. The curriculum is written to reflect the integrated nature of the English Language Arts. There are no separate goals for the reading, writing, speaking, listening, or viewing strands. Separate narrative sections apart from the goals address some of the specific characteristics and instructional issues of each strand and present information on "best practices" related to the teaching of each strand. Though the descriptions of the strands are separated, the strands themselves should still be viewed as interrelated processes with as many if not more similarities than differences.

The *Standard Course of Study* document is organized into the following major sections:

Philosophy - This section defines the nature of the English Language Arts curriculum and describes its relationship with society and the learner.

Strands in the English Language Arts Curriculum - This section addresses essential features and instructional issues related to reading, writing, speaking, listening, and viewing.

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Program Outcomes - These outcomes describe broad, future-oriented competencies and student behaviors and attitudes.

Competency Goals - These goals address the broad purposes for communication. This section describes the specific emphases of each of the four goals.

Competency Goals, Objectives, and Focus Areas - These objectives and focus areas follow each goal and provide further definition. This section identifies sample behaviors that illustrate expected instructional outcomes. Focus areas may also serve as demonstrations of particular objectives.

Glossary - This section defines terms in the curriculum.

Grade Level Competencies - Detailed grade-level expectations appear in this section. (See Appendix C, p.75)

Philosophy

Futurists predict that the twenty-first century will bring new challenges in preparing students for the demands of an information age. They expect the need for an increasingly higher level of literacy. While students continue to need mastery of enabling skills such as reading, writing, and computing, they must also prepare for the new basics which include problem solving, critical and creative thinking, decision making, flexibility and adaptability, and working collaboratively. The intent of the ***North Carolina Standard Course of Study for English Language Arts*** is to equip students with the level of literacy needed to participate as informed and effective citizens in a democratic society, to function effectively in the world of work, and to realize personal fulfillment.

The first priority of an English Language Arts program is language development. Use of spoken and written language sets human beings apart from other forms of life and allows for the expression of the human spirit, the development of ethical responsibility, and the ability to interact with and influence others. Indeed, it is this use of language which challenges us to examine and clarify our thinking as we search for the best means to communicate our thoughts and ideas.

An effective English Language Arts program must be concerned with both process and content—with how students learn and what they learn. In such an environment, teachers and students are guided by the following principles:

- Learning to communicate through reading, writing, speaking, listening, and viewing should be a rewarding experience.
- Students learn to communicate by using language in natural and purposeful ways.
- Communication skills are interrelated processes utilized by the learner to comprehend and convey meaning: oral (listening and speaking), written (reading and writing), and visual (viewing and representing).

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- Teachers provide many kinds of support including skills emphasis and meaning emphasis.

- Teachers balance both direct and indirect instruction.

- Students learn to value their own language when it is valued by others who hold high expectations for all students.

- Learning is enhanced in an environment where students are encouraged to:

  - think critically and creatively about ideas,
  - relate the content of the message to personal experiences,
  - understand and use the patterns and structure of language.

- Learners employ three cueing systems on an intuitive and conscious or metacognitive level. Cues used in communication are:

  - knowledge of sound-symbol relationships (graphophonic information).
  - personal knowledge of language/word order (syntactic information),
  - personal knowledge of the student (semantic information),

- Growth in the ability to use language to communicate is an on-going and life-long process. Assessment of curriculum should be continuous and integrated with the instructional process.

- Assessment procedures should be balanced to include multiple-choice testing, open-ended questions, portfolios, demonstrations, debates, reports, and investigations, etc. Generally, assessment should be focused on improving instruction and should promote quality, depth, and extensions of student work.

- Students should share the responsibility for their learning. They must develop an increasing awareness of their own thinking, including attitudes, habits, and dispositions. Student-initiated learning involving choice, collaboration, and active participation is more likely to produce a high level of interest and accomplishment.

- Reading, writing, speaking, listening, and viewing are processes that enable learners to clarify thinking, to investigate, and to increase knowledge in all subject areas. Integrating the teaching of English Language Arts with other subjects enhances the learner's ability to move from the known to the unknown, to see relationships, and to make generalizations.

Literature and language are the content of an integrated English Language Arts program – reading, writing, speaking, listening, and viewing. The study of these areas should include the structure of language, a social and historical perspective of language, and a respect and appreciation for cultural diversity. Essential to this process is the systematic study of literature with a clear emphasis on the comprehension and response to the beauty and legacy of our language.

A balanced English Language Arts curriculum focuses on the student as an active participant in the learning process. Included among these options is the selective and strategic use of monitoring, self-questioning, and focusing strategies. In a similar manner, engaged learners explore options in presentation: films or videotapes in the study of literature and language; audiotapes in the study of speaking and listening; and word processors in composing, revising, and publishing compositions. Perhaps this focus on the learner as an active participant is best reflected in Aristotle's words "people become housebuilders through building houses, harp players through playing harps." In short, learners become effective users of language through reading, writing, speaking, listening, and viewing. They become thinkers and problem solvers through participating in challenging learning experiences.

As local school systems begin the implementation of this curriculum, they will recognize much that is familiar and some that is new. It is the belief of the English Language Arts Section that the information included in this document reflects current research and best teaching practices. The document has been a collaborative effort among the Department of Public Instruction, local education agencies, and institutions of higher education and is intended to assist educators as they create conditions that enable students to learn and that encourage the disposition to do so.

Strands in the English Language Arts Curriculum

Reading

Reading is the process of decoding print and constructing meaning and is based on the reader's prior knowledge. It consists of three interconnected processes–graphophonic, syntactic, and semantic processing–which do not function separately. With proficient readers, processing occurs automatically, redundantly, and more or less simultaneously. Reading development is interrelated with listening, speaking, and writing.

What Is A Balanced Reading Program?

A balanced reading program includes:
- Knowing students individually.
- Balancing both direct and indirect instruction.
- Balancing instructional activities including skills emphasis and meaning emphasis (Strickland, 1996).

Balanced reading is deep-rooted in the belief that teachers should be constantly aware of students' individual needs and progress. Toward this end, teachers should make full use of a variety of assessment tools such as teacher observations, oral reading samples, writing samples, spelling samples, and portfolios, as well as standardized and other tests. Teachers who know students individually provide many kinds of support enabling students to move to higher levels of reading and literacy development. Teachers of balanced reading provide direct instruction to scaffold learning and make learning to read and write easier. They also provide ample opportunity and support for students to use and extend their instruction in functional reading and writing.

In the classroom there should exist a balance of instructional activities for reading. Modeled reading, shared reading, guided reading, and independent reading, as well as direct instructional activities, are all included in the balance.

Children must spend time–both inside and outside the classroom–reading and writing under conditions for learning that are favorable for individual achievement. Likewise, some time should be spent in individual, small group, and whole group direct instruction to support children's literacy needs.

The reading program should balance an emphasis on helping children to acquire relevant skills and knowledge and an emphasis on helping them learn to use those skills and knowledge in service of independent, productive, and thoughtful reading and writing. A comprehensive plan will be effective when teachers provide direct instructional support and the kinds of daily reading and writing that are needed for the complex process of learning to read.

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A Balanced Perspective on Systematic Phonics

Phonics is the relationship between sounds in speech and spelling patterns. The power of phonics for word identification is largely dependent upon knowledge about the sounds of spelling patterns and surpasses simple letter sound correspondence and blending. For example, the sound of the vowel e in be versus bet depends upon the position of e in the long versus short vowel spelling pattern. "Phonics instruction," according to Marilyn Adams, "is not so much about correspondences between single letters and phonemes as it is about correspondences between spelling patterns and speech segments" (1997, p. 3).

Learning phonics is essential. Research shows that early phonics instruction produces students with superior word-identification skills which is a desirable outcome of the balanced reading program. Additionally, phonics knowledge supports spelling development. Phonics is not, however, sufficient for children's literacy learning. In a balanced reading program word-identification skills do not take dominance over reading comprehension (Routman, 1996). Time must be spent developing all aspects of reading including comprehension and fluency. To this end, time spent on early phonics instruction must be balanced to allow appropriate time spent on reading comprehension, fluency, and writing.

John Shefelbine reports "Phonics instruction should be systematic and thorough enough to enable most students to become independent, and fluent readers, yet still efficient and streamlined" (1995, p. 2). While characteristics of systematic phonics instruction can vary, phonics should no longer be associated with stacks of worksheets and endless drill. Shefelbine provides the following general characteristics of systematic phonics:

> "–short but frequent teacher-led lessons
> –the introduction, review, and application of an initially limited but growing set of spelling-sounds relationships (rather than working on the entire alphabet at once)
> –instruction in blending
> –correlated work in spelling (students read what they can spell and spell what they can read)" (Shefelbine, 1995, p. 5).

Phonics is directly related to the graphophonic cueing system, one of three generally acknowledged cueing systems that readers use. Balanced reading instruction pays credence to the importance of having children use all three cueing systems when reading. Knowledge about the sounds of spelling patterns–or phonics–is a powerful cue for the reader. In addition, meaning gleaned from semantic cues and grammatical structure gleaned from syntactic cues help the reader determine what a word might mean (Weaver, 1994; Clay, 1991).

Children should be helped to understand phonics skills and the use of graphophonic cueing strategies through direct instruction. To help them internalize phonics skills and strategies as an integral part of reading and writing, phonics skills should be practiced in meaningful context (Routman, 1996; Strickland, 1996) including leveled text (Clay, 1991) and decodable text (Adams, 1997). However, studying spelling patterns and words in and of themselves can also be valuable activity (Templeton, 1992).

A general developmental continuum for phonics and spelling instruction begins with rhyming and the development of phonemic awareness in kindergarten; and it continues with focus on short vowels, common consonants and consonant blends, and a few high-frequency long vowel patterns–all for single-syllable words in first grade. The general continuum provides for continued focus on vowel patterns and generalizations for single-syllable words in second grade and focuses on syllabication and structural analyses in third grade (Gentry, 1997; Shefelbine, 1995).

Not all children need the same amount or same kind of instruction. In the balanced reading program, phonics instruction should fit individual needs. Local flexibility should be exercised in the decision-making process for determining how best to incorporate systematic direct phonics instruction in the balanced reading program.

The Comprehensive Model on the following page illustrates:

Teaching Model of Reading ➡

Engagement and Motivation
(Reason for and Appreciation of Reading)

Word Recognition
(Phonics and Decoding, Sight Word Development, Spelling Development, Appreciation of Morphemes)

Comprehension
(Understanding Narrative and and Expository Text)

Emergent Literacy
(Concepts about Print, Letter Knowledge, Phonemic Awareness, Understanding Alphabetic Principle)

Vocabulary and Concept Development
(Dictionary Use, Inferring Meanings from Context, Proper Usage, Shades of Meaning, General Knowledge)

Strategies Used by Good Readers
(Developing a System for Learning)

Fluency
(Automatic Word Recognition, Good Oral Reading, Good Silent Reading)

Types of Instruction ➡

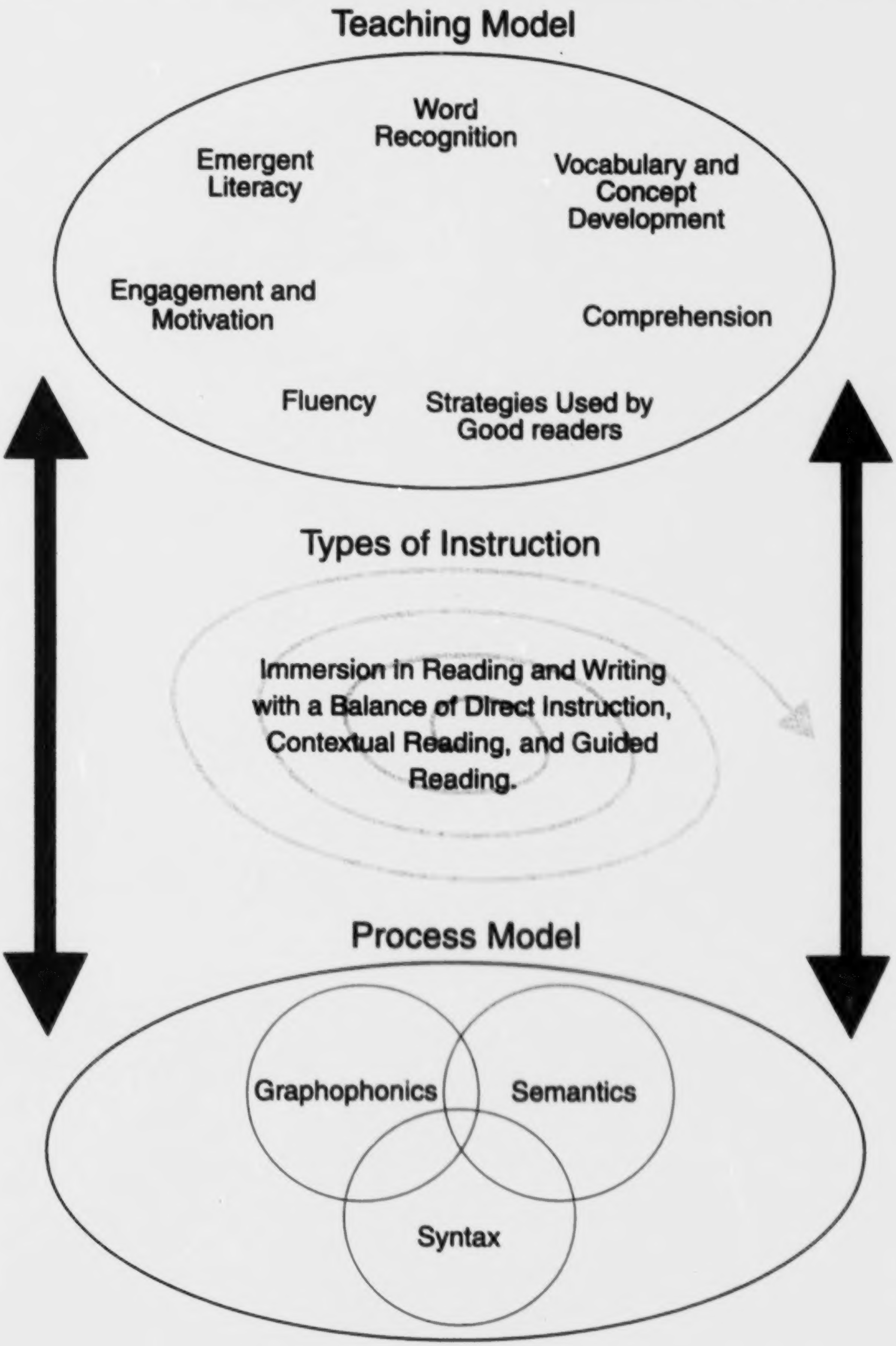
Direct Instruction, Contextual Reading, Guided Reading

These types of instruction are spiraled in a classroom where children experience immersion in reading and writing, and all are needed in the balanced reading program.

Process Model of Reading ➡

Graphophonic Processing, Semantic Processing, and Syntactic Processing

North Carolina Comprehensive Model of Reading


Teaching Model
Word Recognition
Emergent Literacy
Vocabulary and Concept Development
Engagement and Motivation
Comprehension
Fluency
Strategies Used by Good readers
Types of Instruction
Immersion in Reading and Writing with a Balance of Direct Instruction, Contextual Reading, and Guided Reading.
Process Model
Graphophonics
Semantics
Syntax

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This comprehensive model recognizes the child's development of language through both direct instruction and contextual learning, and through both selective skills activities and extensive interaction with varied print materials. Young readers must experience success in every one of the components of this model. Proficient readers process these components automatically and simultaneously. Because reading is essentially a dynamic thinking activity in which the reader interacts with text to create a meaningful understanding of the writing, good readers seek to identify meaning.

In addition to this graphic representation, it may be helpful to make the analogy between the North Carolina Model of Reading and the performance of a symphony, an analogy borrowed from *Becoming a Nation of Readers: The Report on the Commission on Reading* (1985). As in a symphony, reading takes place only when the components are put together in a smooth, integrated manner. Success in reading, as in a powerful musical performance, comes from systematic practice accompanied by constructive feedback over time.

Description of the Components

Engagement and Motivation

Engagement and motivation are crucial components for children as they learn to read. Adults must foster joy in and purposefulness for reading because children will not become proficient readers if they do not enjoy the experience or see any value in it. Adults must also help students understand that print can reveal wonderful stories, knowledge, and insights, an understanding which can be strong motivation for learning to read (Brewer, 1995).

Some children have experienced as many as 1,000 hours of informal reading and writing encounters before they enter school (Adams, 1990). They have become engaged and motivated by literacy in activities such as being read to, watching adults write letters and lists, trying to write themselves (drawing or "scribble" writing), manipulating magnetic letters or blocks, and talking about environmental print such as labels and signs. Many children enter school without these experiences that all children need; they need to see literacy (reading and writing) as important to adults, as a *useful* and *meaningful* endeavor, and as an *exciting* and *enjoyable* activity.

Since children come to school with varying levels of knowledge about reading and writing, teachers of young children need to discover what each child knows about printed language and then plan individual, small group, and whole group activities and direct instruction that will develop rigorous proficiency and promote continued literacy growth for all students.

Young children also need to be developing formal knowledge about language and text. They need to be taught about the uses of print and about the logic and conventions of its spelling, its morphology and meaning, its syntax or grammar, and its larger rhetorical structures and genres. They need to hear quality literature and interesting, informational text, and they need opportunities to discuss–to select, interpret, and integrate ideas. Older children need to be engaged in reading. They need to read widely, critically, and reflectively, and they need to be given extended time to read and the opportunity to choose what they will read at least part of the time. They also need to be given guidance in thinking about and learning from what they read. They need to be able to support their responses to reading and share their responses through writing and discussion.

In addition, children need to write as they learn to read. There should be a strong connection between reading and writing, not only because children who read become better writers and children who write become better readers (Stosky, 1983; Tierney and Leys, 1986), but also because the reading and writing connection increases engagement and motivation. Children who are engaged in both writing *and* reading activities learn that meaning is what the writer is trying to communicate, and thus they read for meaning and write for clarity and understanding. Writing helps children to understand purpose and audience, which underlie good writing; that understanding translates into good strategies for reading. "Writers make more sensitive readers and readers make more informed writers" (Cunningham, p. 190).

It is extremely important that young readers have extended practice in reading. They need interesting and well-written books to read, time in which to read, and reasons for wanting to read. In addition, children are more likely to be motivated to read when they feel successful rather than frustrated and when they can sense their own growth and progress. In view of this, the North Carolina Public Schools must seek to develop in every student the knowledge and understanding, as well as the perspective and attitudes, that necessarily underlie true literacy.

Within the North Carolina Comprehensive Model of Reading, thoughtful engagement and motivation are absolutely necessary at all ages and thus provide a foundation for successful reading. The child will learn these attitudes from the context of literacy activities in which she or he is engaged and from discussions with significant adults.

Some ways to foster *engagement* and *motivation* include:

- Routinely incorporate activities that foster a desire to read such as reading aloud books with predictable patterns, repetition, and rhyme; books that are related to students' life experiences; and books that stretch students' imaginations and sense of wonder.
- Provide time and opportunities for students to read a variety of materials representing appropriate reading levels and a variety of topics and genres.
- Engage in sharing and discussing texts read independently, in pairs, in small groups, and in large groups.
- Provide live and recorded models of adults and students reading.
- Share favorite books with other students and adults.
- Share nonfiction texts with students in a way that makes the information and puzzles they present come alive.
- Engage students in shared reading experiences from the beginning to foster feelings of success and membership in a community of readers.
- Help students learn to analyze the author's language and craft, to reflect on their understanding and reactions to what is read, and to wonder about the new thoughts and questions that the text invites.
- Demonstrate connections between reading and writing by asking students to create, discuss, and publish their own stories.

Emergent Literacy

The process of literacy begins much earlier than was previously believed, with early contact with print (for example, soft alphabet blocks, books, legos, etc.) serving as a basis for a lifelong learning process. Also, literacy is now regarded as a social and a linguistic process, rather than merely a cognitive skill to be learned.

The importance of Emergent Literacy is indicated by the following research: IQ, mental age, race, parents' levels of education, left or right handedness, and perceptual styles are weak predictors of children's reading success. Rather, these factors of emergent literacy are heavily correlated with later reading success:

- Print awareness (knowledge of print)
- Alphabetic knowledge (graphophonic symbols/sounds)
- Phonemic awareness (linguistic awareness of words, syllables, phonemes) (Diamond and Mandel, 1996).

Both direct instruction and extended exploration of these concepts in real reading and writing are necessary for developing emergent literacy. However, different children will require different levels of direct instruction, with some children needing more explicit instruction and more repeated experiences. Children who are not already reading and who cannot successfully decode need phonemic awareness, explicit instruction in the fundamental sound-letter associations, and opportunity to practice in text that they can decode and that is at an individually appropriate level of difficulty. Meanwhile, read-alouds and guided reading sessions should be maintained to ensure ample experience with meaningful, rich literacy and language.

Research in emergent literacy indicates the following important points:

- Literacy development begins early in life, long before formal instruction.

- The functions of literacy (how reading and writing are used in real life situations to accomplish various goals) are an integral part of the learning process.

- Reading and writing are interrelated and develop together.

- Children learn about written language through active engagement in reading, writing, and discussion with others.

- Children should be helped to understand skills and strategies through direct instruction.

- To help children internalize skills and strategies as an integral part of reading and writing processes, they should be practiced within a meaningful context.

- Progress should be monitored by ongoing, multiple observations and analysis of reading behaviors and writing samples as children engage in reading and writing meaningful, connected text (The Primary Program: Growing and Learning in the Heartland, 1993).

Print awareness is an important foundation for students' learning how to read. "[C]hildren should possess a broad, general appreciation of the nature of print. They should be aware of how printed material can look and how it works; that its basic meaningful units are specific, speakable words; and that its words are comprised of letters. Of equal importance, they should have a solid sense of the various functions of print—to entertain, inform, communicate, record—and of the potential value of each of these functions to their own lives. To learn to read, a child must learn first what it means to read and that she or he would like to be able to do so" (Adams, 1990). While some children come to school with extended knowledge of print, other children do not; teachers of young children need to assess what each child knows about print and make sure that each child acquires the print awareness he/she needs for success in reading.

Ways to teach print awareness include:

- Teach book concepts and print concepts through demonstrations as part of shared reading and shared writing.
- Use teacher demonstrations/direct instruction with individual students.
- Use teacher modeling to demonstrate book and print concepts such as the concepts that words can be spoken or written and that print corresponds to speech.
- Provide language activities that develop listening and expressive skills (e.g., listening to stories, poems, and expository texts; telling and retelling stories; enacting stories; discussing word meanings, ideas, books, and experiences; etc.).
- Provide a classroom full of print that is varied and meaningful to students (e.g., lists of birthdays and chores, labels on possessions and seat assignments, etc.). Such printed materials could be accessible to students as they go about the reading/writing routines of the day.
- Teach page arrangement, story grammar, and directionality of print with repeated readings and modeling with big books.
- Write students' words (what they say) for teacher and students to read aloud.

Letter Knowledge To help young children learn to recognize and print upper- and lower-case letters, the following activities are recommended:

- Familiarize students with the alphabet by teaching them alphabet songs and poems, such as the ABC song.
- Play letter recognition games to help them learn to recognize both upper- and lower-case letters.
- Teach students to print their own names and expect them to label their work regularly.
- Play games that teach the children to pair upper- and lower-case forms of each letter.
- Assist students in learning to print the letters with tactile, kinesthetic mediums such as magnetic and sandpaper letters.

- Give students ample and regular opportunity to print the letters of the alphabet using the large motor skills (writing in sand, fingerpaint, salt, or rice or writing on the chalkboard) as well as the small motor movements.

Phonemic awareness is the insight that words and syllables are themselves comprised of strings of still smaller sounds, the phonemes. In principle, phonemes are the speech sounds that correspond to letters in an alphabetic language. For this reason, an awareness of phonemes is essential to making sense of the logic of our writing system.

Phonemic awareness is difficult and should be developed in progressive stages. It includes segmenting and blending, and children need to do both (Fox, 1996). To foster children's awareness of phonemes, engage them in games that encourage word play–rhyming, blending, segmenting, and all manner of play with the initial, final, and medial sounds of words. To complement activities that are specifically designed for developing phonemic awareness, find ways to direct the students' attention to the sounds of words in their daily interactions with language print.

Research indicates that poor phonemic awareness is a major underlying cause of specific reading difficulties. In order to make sure that lack of phonemic awareness can be detected and corrected before it causes reading problems, teachers should take full advantage of diverse assessment strategies.

Ways to teach phonemic awareness include:

- Gradually move from larger, easier phonological insights to smaller, more subtle ones.
- Share stories, poems, songs, and dances that play with language sounds and patterns.
- Engage the children in games that combine phonemic play with meaning, e.g., "I see something yellow whose name begins with /m/."
- Engage the children in games that encourage word play and rhyming.
- Engage the children in games that encourage blending of syllables and phonemes.
- Engage the children in games that encourage segmenting of initial, final, and medial phonemes.
- Foster attention on sound elements with words by clapping syllables, manipulating magnetic letters, and manipulating tokens to match sounds or to match sounds during slow word articulation.
- Engage students in segmenting activities such as tapping and counting sounds in words and using a rubber band to illustrate how to segment words into sounds.
- Engage children in blending activities, for example, the use of visuals such as a slide to illustrate how sounds are blended together during pronunciation.
- Carefully monitor and assess the growth of each child's phonemic awareness.

Alphabetic Principle

In the later stages of Emergent Literacy and as a bridge into the Developing Literacy stage, children should begin to understand the basic alphabetic principle: The letters of written words represent the phonemes of spoken words. Phonemic awareness and letter knowledge are prerequisites to understanding the alphabetic principle, but they are not quite enough. Instruction is also warranted on how the relations between letters and sounds are represented in print.

Research shows that children who have a basic understanding of the alphabetic principle generally move into the challenges of learning to read and write words with ease and confidence. In contrast, children without this basic understanding have great difficulty.

The purpose of teaching children the alphabetic principle and sound-letter relationships is that they will be able:

- In reading to form an approximate pronunciation that must be checked against their knowledge of real words and the context of the text.

- In writing to form an approximate spelling of a word and to move from phonemic or temporary to standard or conventional spelling.

The goal of alphabetic instruction is for readers to be able consistently to use information about the relationships between letters and sounds and letters and meanings to assist in the identification of known words and to figure out unfamiliar words independently.

The alphabetic principle can be taught in the following ways:

- Engage students with alphabet books, both commercial and student-made.

- Provide direct instruction on letter-sound correspondences using key-word displays.

- Create an environmental alphabet with materials brought from home (e.g., napkins, empty cereal boxes, place mats from fast-food restaurants, etc.).

- Encourage children to spell independently using their letter knowledge and phonemic awareness.

- Help children realize that the alphabetic principle applies not merely to the first letter and sound of a word but to letters and sounds in every position of a word.

- Play letter-sound games to help the children understand that the sequence of sounds in a word are represented, left-to-right, by the sequence of letters.

- Focus attention on letter-sound patterns through multisensory activities involving visual, auditory, and kinesthetic and tactile experiences.

Important Concepts for Teachers of Early Reading Instruction

Teachers who teach early reading instruction should transform the following ideas into their teaching. These transforming ideas are based on research provided by the Office of Educational Research of the U.S. Department of Education has compiled research (Sweet, 1993).

- *Children use prior knowledge to construct meaning when reading.*

  Reading comprehension is a process of constructing meaning from text based on the reader's background of experiences. Overall prior knowledge comes from past experiences both in and out of school. Prior knowledge for reading a specific text is of two types: text-specific knowledge for understanding a type of text (e.g., elements of fiction versus nonfiction) and topic-specific knowledge for understanding the topic of the text (e.g., knowledge about reptiles). Independent reading and writing are essential for expanding students' overall knowledge. Activating both text-specific and topic-specific prior knowledge helps the reader build meaning when reading a particular text.

- *Effective reading instruction can help develop engaged readers who are knowledgeable, strategic, motivated, and socially interactive.*

  Classrooms should have print-rich environments where readers can choose their own reading materials at least part of the time, where readers learn and practice reading strategies, and where they are routinely engaged in self and mutual assessments.

- *Phonemic awareness, the explicit awareness of the sounds of words, is a precursor to competency in identifying words and one of the best predictors of later success in reading.*

  Word identification needs to become effortless and automatic for the reader to devote attention to constructing meaning while reading. Efficient, early instruction contains a balance of activities and strategies to improve word recognition, including phonics instruction, reading meaningful text, writing, and spelling activities. Effective teachers interweave these activities in their instruction and make sure that direct teaching of skills is complemented and extended by encouraging students to use and extend those skills in authentic, meaningful reading and writing activities.

- *Teacher modeling is an important form of classroom support for literacy learning.*

  Modeling should be both implicit, or a part of the literacy experience (e.g., reading aloud to children and engaging them in conversation about the meaning of the story), and explicit, or direct teaching of how to approach a text (e.g., think-alouds where the teacher shares with students her/his thinking process as she/he completes a task).

- *Reading of storybooks and informational texts—in the context of sharing experiences, ideas, and opinions—is a highly demanding task for children.*

  Discussion among readers and listeners of shared text is essential and intellectually demanding for young readers.

- *Responding to text, both fiction and nonfiction, helps students construct their own meaning.*

  Students need to be taught to read for inferences which can be substantiated and for personal and aesthetic response. Encouraging personal response can help the reader construct more complex and accurate meaning.

- *Children who discuss what they read daily are more likely to become critical readers, writers, and learners.*

  Discussion in which students hear alternative points of view and solve problems encourages logical reasoning skills.

- *Expert readers have strategies to evaluate meaning before, during, and after reading.*

  Teachers should instruct students in how to use strategies such as making an inference (or drawing a conclusion), identifying important or relevant information, monitoring their own thinking while reading, summarizing information, and generating questions.

- *Children's reading and writing abilities develop together.*

  Writing leads to improved reading, reading leads to better writing, and combined instruction leads to improvement in both reading and writing.

- *The most valuable student reading assessment occurs day to day for every student. It reflects current understanding about reading and is used to inform instruction.*

  Good classroom-assessment practices include using unabridged, rich text for construction meaning; accounting for students' prior knowledge (including phonological awareness) before they begin to read; encouraging students to self-assess; and collecting samples of students' work over time.

In addition, teachers of young children need to understand the importance of the role which parents play, and they need to help parents understand how they can support and extend literacy at home. Not only are parents the first tutors in solving the fascinating puzzle of written language, they are equally important in fostering the child's engagement and motivation. Parents of efficient readers tend to be knowledgeable about their child's reading performance, visit and observe in the classroom periodically, and support reading and writing at home (Anderson, 1985).

Word Recognition

The knowledge and skills underlying competent word recognition and spelling should be introduced through direct instruction and extended and practiced through meaningful reading and writing (Adams, 1997).

Readers of English move their eyes from left to right as they read, word by word and line by line. Word recognition occurs rapidly and automatically for skillful readers. Nevertheless, with technologically sophisticated research methods, including eye-movement recordings and brain-imaging techniques, researchers have determined that readers fixate on nearly every word and in a fraction of a second take in the letters of the word, translate those to speech sounds, and evoke the word's meaning.

The role of effective phonics instruction is to help children understand, apply, and learn the alphabetic principle and conventions of print, to foster independence by helping children identify unknown words on their own, and to increase children's reading vocabulary. Phonics instruction should involve practice in and understanding of spelling-sound correspondences and rules. The most effective phonics instruction takes care to *clarify key points and principles* to students, gradually *builds from basic elements to more subtle and complex patterns,* and *conveys the logic of the system* to invite its extension to new words.

Phonics instruction should include the following:

- Teach children the letter-sound and spelling-sound correspondences.
- Teach children a functional command of phonics using both visual, auditory, and tactile/ kinesthetic modalities.
- Take opportunities during shared reading to call children's attention to the sounds that are encountered.
- Strengthen the child's understanding of regular patterns of phonics by continuing extensive literacy (reading and writing) experiences.
- Teach children to use phonics to spell while writing as well as to decode new words while reading.
- Help beginning readers see the value of using phonics and decoding strategies in their own reading by reinforcing phonics lessons with decodable books (Juel and Roper/Schneider, 1985).
- Coordinate decoding lessons with spelling lessons on the same phonics patterns.
- Collect examples of the sounds/phonics principles studied in the classroom.
- Invite children to try to sound out well-chosen, decodable words they encounter in shared books and daily activities.
- Provide direct instruction to teach students sound-symbol relationships, how to read single words composed of these sounds, and how to read connected phrases and sentences composed of the same sounds.

Encourage children to write because it is one of the most powerful ways to teach them sound/letter correspondences. As they watch adults record their words and, later, as they learn to encode sounds into letters, they are learning phonics. Writing also provides information about children's knowledge of phonics as well as engaging them in the sound-letter patterns in words.

Of equal importance to the quality of phonics instruction is the availability of practice in using the phonics instruction in reading meaningful selections. Those selections should come from a range of books that tell complete interesting, well-written stories and that contain words that can be identified by the phonics instruction that has been taught.

The goal of teaching children phonics is that they gradually become able to decode even never-before-seen words effortlessly and automatically as they read. Toward this end, it is not enough to teach children how to sound words out. They must also be encouraged to use this strategy in reading on their own. Herein lies the value of using decodable stories–that is, stories in which the new words can be sounded out with the phonics that the children have been taught. Research shows that first graders whose phonics is reinforced with decodable texts not only retain their phonics lessons better but extend their knowledge of spelling patterns beyond what has been taught. Complementing children's early phonics lessons with practice in reading decodable books greatly eases their movements into text with no vocabulary control later in the first-grade year.

Phonics instruction should focus on important patterns, rather than a list of rules. *Becoming a Nation of Readers* warns against trying to teach *too many* sound-letter relationships for *too long*. According to the Commission on Reading, "phonics instruction should aim to teach only the most important and the most regular letter-to-sound relationships, because this is the sort of instruction that will most directly help the child understand the alphabetic principle. Once the basic relationships have been taught, the best way to get children to refine and extend their knowledge of letter-sound correspondences is through repeated opportunities to read"(p. 38).

While all children need instruction in phonics, there is no one set of materials that will guarantee success for all readers. Every child will not need the same instruction, or the same amount of instruction, in phonics; rather, instruction must be individualized for the reader. Some students will need intensive help with phonics instruction, and well-documented student data should support the instructional decisions made for these children. Children who have phonological processing difficulty, even after phonological instruction, will need instructional support past second grade in order to become successful readers (Felton, 1993). Because of this need for individualization and because of the need for local autonomy, flexibility for determining appropriate phonics-based instruction must be left to professionals in schools and school systems.

Because reading and writing are so interrelated, students use temporary spelling as a means of developing and reinforcing knowledge of phonics; children become better decoders when they are encouraged to spell phonetically as they write (Cunningham, 1995).. The use of temporary spelling is an effective, essential stage in the developmental progression toward becoming an independent reader and writer. Temporary spelling is *temporary,* however; students do need to learn how to spell conventionally. Temporary spelling of common spelling patterns should progress toward more conventional spelling by the second grade, with the students mastering the conventional spelling of increasing numbers of words.

Spelling instruction should help students understand patterns, how words are put together, and conventions of correctness. In addition to direct instruction on spelling, extensive reading and writing for real and authentic purposes, including opportunities to edit for final publication, are invaluable in helping students become good spellers.

Ways to teach *spelling* include:

- Teach specific spelling patterns and phonics through demonstrations to small, flexible groups of children.
- Plan specific spelling instruction to support and expand students' writing proficiency and sophistication in whole group, small group, and individual settings.
- Plan mini-lessons for whole group, small groups, or individuals based on identified needs in students' writing drafts (Laminack and Wood, 1996).
- Usually by the second grade and higher–when a preponderance of children's temporary spellings exhibit *visual* conventions of print such as vowels in every syllable, vowel digraphs, the e marker long-vowel pattern, and when spellings exhibit frequently used English letter sequences such as YOUNGIGHTED for *united*; help children develop individual lists of high-frequency words they need to know how to spell (Gentry, 1997).
- Help children find words they need to know how to spell in their writing.
- Teach spelling directly by conducting a shorter spelling check of high-frequency words to help children find words for their individual lists of words they need to know how to spell (Gentry and Gillet, 1993).
- Encourage the use of strategies to master unknown words.
- Organize spelling instruction to help children notice and practice spelling patterns that appear in many words, e.g., night, right, light; table, pickle, middle.
- Connect the study of spelling patterns directly to writing by having children glean some words for spelling study directly from their writing.
- Routinely encourage the use of personal dictionaries, word banks, spell-checks, word charts, word walls, topical word lists, personal word lists, etc., as resources for everyday writing for various purposes.
- Assist students in gaining greater proficiency in phonics and spelling patterns by assisting them in reading and rereading meaningful, connected text.

Vocabulary and Concept Development

Vocabulary study often fails because it does not honor the insightful understanding (including background knowledge) that a student must have in order to make a vocabulary word a part of his/her speaking, reading, and writing language. There is, for example, a vast difference between "recognizing" a word by thinking "I think I've seen that word before" and "That's something that's a part of my life experiences." A child who has been bird-watching with an adult may "understand" the word "migration" on a different level from a child who has not had these experiences but who may have memorized a definition. Vocabulary acquisition thus is intricately tied to academic and life experiences and to discussions about those experiences.

A combination of a definitional approach (where students learn definitions or synonyms of words) and a contextual approach (where students draw conclusions about the meaning of the word from its use in the sentence) is more effective than either approach in isolation (Nagy, 1988).

Context can play an important role in determining the meaning, not the identity, of a word. Using contextual clues in this way does not mean "guessing;" it means that, given that the text is at an appropriate level of difficulty without a large number of unfamiliar words, children need to take time to study an unknown word. They can, for example, study the grammatical structure of the sentence, determining if the unknown word is a verb, a noun, or a modifying word. They can look for similarity to a familiar word. They can look for relevant information in surrounding words, phrases, sentences, and paragraphs. All of these involve the strategic use of contextual clues.

Direct instruction in vocabulary should thus be enhanced by contextual reading and by learning good strategies for studying an unknown word. Incidental learning of vocabulary in reading can seem quite inefficient (an average fifth grader has only a one-in-twenty chance of internalizing a word from context); however, if that fifth grader spends twenty-five minutes a day reading, the student will encounter 20,000 unfamiliar words during the year. If she/he learns one-in-twenty from context, that will be a thousand words per year. If the teacher could add another twenty-five minutes of reading time per day, the student would learn two thousand new words per year just from context (Nagy, 1988).

In the study of vocabulary, the teacher may emphasize instruction in the following:

- Classifying words by meaning
- Classifying words by function
- Finding synonyms/antonyms
- Creating analogies (a strategy in which a reader uses familiar words or word parts to understand unfamiliar words).

Other ways to encourage vocabulary development include:

- Routinely encourage and direct the study and discussion of content area words, technical words, etymologies, Greek and Latin prefixes, suffixes, and roots.

- Play word games individually, in pairs, in small groups, or whole group settings.

- Encourage students in activities such as synonym building, near-synonym distinctions, and semantic trees to expand and develop more precise, sophisticated vocabulary.

- Ask students to create glossaries of new words they encounter in their reading.

- Routinely ask students not to stop with the definition of the word, but to discuss its usage and shades of meaning in the context in which it was used.

- Encourage students to create and continually update a notebook of new vocabulary items encountered in their reading.

- Teach students how and when to use a dictionary or glossary.

Comprehension

Comprehension is the focal point of reading–a dynamic, interactive process of constructing meaning. Reading is a complex process which requires the coordination of cues as sources of information: sound/symbol relationships, syntax, semantics, and context. The three cueing systems–the graphophonic, the semantic, the syntactic–come together for the reader in comprehending written text and in providing a foundation for success.

Graphophonic cues deal with the reader's knowledge of the sound-symbol match. As readers process print, they quickly receive information from print and accurately match their knowledge of words and sound-symbol relationships. Proficient readers ask themselves, "Is this word familiar? Does this sound and look right?"

Semantic cues are meaning cues including words, concepts, prior knowledge, and experience. These are used as readers bring their knowledge of the world, feelings, attitudes, and beliefs to the printed page. Proficient readers are always attuned to the question, "Do I understand what the author is referring to?"

Syntactic cues refer to knowledge about word order or the grammatical structure of language. If readers have opportunity to read a variety of syntactic patterns, they will be more familiar with the sentence structures they encounter and better able to reconstruct the writer's message. Proficient readers ask themselves, "Does this sound like language?"

Pragmatics is the way a reader considers the context in which the text occurs. Proficient readers have a wide background of experience with language in many situations such as the home, playground, classroom, and storybooks. They understand that the language one would use in a formal situation is different from that in an informal situation; the language of science or nonfiction is different from the language of literature. Proficient readers ask themselves, "Is this the language that should be used in this situation?"

In comprehension, proficient readers use all three cueing systems and pragmatics, in different degrees, during the preparation, engagement, and response stages of reading. Proficient readers understand the characteristics of different modes of text, such as the expressive or personal (e.g., journals, learning logs), narrative or story (e.g., folk tales or novels), poetic (e.g., nursery rhymes), dramatic (e.g., skits or puppet plays), and expository or informational (e.g., persuasion or newspaper articles). Proficient readers adapt the strategies they use in preparing to read, engaging in reading, and responding to what they have read according to their purpose for reading and according to the mode of text they are reading.

Proficient readers also use contextual clues as a valuable comprehension strategy. They use text structure, including the organization of the text and their knowledge of the characteristics of the genre they are reading, to aid comprehension. Strategic readers reason their way through text, using problem-solving strategies and context clues to differentiate between what they do and do not understand, to form hypotheses and then test them, to relate previous paragraphs to what they are reading, to look for consistency and completeness in light of available information, and to be open to other possible explanations or interpretations.

Preparation

Before reading, proficient readers:

- Preview the text.
- Activate and build upon background knowledge.
- Set purpose for the activity (motivation).
- Focus their attention on the task.
- Make predictions about the content.

Engagement

During the reading process, proficient readers:

- Check their understanding by paraphrasing the author's words.
- Monitor comprehension by using context clues.
- Integrate new information with existing knowledge.
- Reread and revise their purposes, predictions, and understanding.
- Use a "fix-up" strategy when they do not understand.
- Give complete attention to the task.
- Persevere with difficult text.

Response

After reading, proficient readers:

- Summarize what has been learned.
- Reflect on and evaluate the information and ideas in the selection.
- Respond and make applications of the information and ideas.
- Seek additional information, if needed.
- Decide if they have achieved their purpose.

(Orange County Public Schools, 1988 and Cambourne, 1988)

The proficient reader:

- Understands that different purposes and different texts require particular reading/thinking strategies.
- Identifies the task and sets the purpose of reading.
- Chooses appropriate strategies, such as rereading, summarizing, and looking for relationships.
- Self-monitors for comprehension.

Ways to strengthen comprehension include:

- Read aloud to students every day in every subject and then allow time to discuss reading before, during, and after the reading.

- Provide ample time for text reading, including application of strategies in real-reading situations and independent practice accompanied by constructive feedback.

- Provide guided reading instruction for all students through direct instruction, discussion, guided practice, and modeling of comprehension strategies such as summarizing, using the structural elements of text, drawing conclusions, making generalizations, monitoring understanding, and noting agreement or disagreement with prior knowledge.

- Scaffold and provide guided practice of student reading of different modes of text.
- Provide ample time and opportunity for reflection on independent reading through written or verbal responses and for constructive feedback.
- Provide opportunity for students to work independently and collaboratively, using reading and writing to address real-life problems and concerns.
- Give students opportunities to demonstrate their comprehension through critical and creative responses to reading; for example, with plays, dioramas, discussions, letters, debates, art projects, or puppetry.
- Provide teacher-directed instruction in reading for inference; for example, how to read ***between*** the lines and ***beyond*** the lines and to justify their inferences with evidence from the text.
- Use concepts maps and diagrams, reciprocal teaching, QAR (Question, Answer, Response), story maps, cloze, and story structure to help students understand and comprehend text.

Strategies Used By Good Readers

Proficient readers are able to apply strategies flexibly, selectively, independently, and reflectively. They consciously monitor their own thinking as they read, set purposes, ask themselves questions, recall prior information, look for organizational patterns, and assess the efficiency of their strategies. They know how to monitor whether they "know" material as compared to simply having read it and understood it.

Proficient readers also adjust the rate at which they read, depending upon the purpose for reading and upon the genre. For example, a reader who is looking for a specific piece of information may scan the text quickly. The same reader may read much more slowly when reading critically or reading carefully for detail. Some genres, such as a short story, can be read relatively quickly; other genres, such as poetry, may require slower reading, and even rereading.

Pressley and Afflerbach (1995) have demonstrated the importance of study strategies such as (1) overviewing before reading, (2) looking for important information in text and paying greater attention to it than to other information, (3) changing reading strategies when comprehension is not proceeding smoothly, and (4) carrying on a responsive conversation with the author.

Some ways to teach good reading strategies include:

- Use thinking aloud, modeling, and demonstrating the kinds of questions proficient readers ask themselves as they read.
- Provide opportunities for students to model and explain to others how they monitor as they read.
- Teach students to take effective notes by selecting relevant information and recording it in a useful format.

- Conference/debrief with students independently, in small groups, or in whole groups asking them to explain what strategies they used in reading.

- Teach students to use visual organizers, mnemonics, organizational systems, media resources (including dictionaries and glossaries), KWL, mapping, think-alouds, and self-regulating strategies.

Fluency

Efficient readers take in, very nearly, each and every word of text, translating the words to sounds and evoking the word's meaning in a process that is so smooth, and so fast, that they are not even aware of doing so (Crowder and Crowder, 1992).

Efficient readers must be able to "break the code" that relates the spelling of a word to its sound and meaning so quickly and so accurately that the decoding process coordinates smoothly with the process of constructing meaning. Fast and accurate word identification is thus correlated with strong reading comprehension.

Ways to foster fluency include:

- Provide time and opportunities for students to read and reread materials on their independent reading level.

- Provide opportunities for repeated reading of text through shared reading, independent reading, choral reading, home reading, reader's theater, puppetry, etc.

- Give students access to reading materials with increasing levels of difficulty, from materials that can be read independently to materials that are more challenging. Ensure that students spend time every day reading in materials that they can read independently.

- Help beginning students develop a workable number of high-frequency words that can be recognized at a glance (e.g., *the*, *of*, *are*, *you*) so that the student's focus is not diverted from comprehending.

- Model fluent reading for students and then reread the same text with them to support fluency.

- Use techniques such as taped reading, choral reading, and repeated readings in direct teacher instruction with children who have difficulty with reading fluency.

- Help students learn how to develop essential background knowledge before reading.

- Every day find ways to engage all students in a variety of different reading activities, including independent reading of books of their choice.

Stages of Literacy Development

Literacy is a process that continues through life. Teachers need to be aware of the stages of literacy so that they can help move each child to the next stage.

Early Emergent Literacy usually occurs in preschool. In this stage, children come to view reading and writing as activities in which people engage. They know that books contain stories, but they do not yet understand fully the alphabetic principle or the conventions of print. They show interest in print and begin to develop preferences for particular stories and skills in handling books. Writing is generally scribbling, making letter-like shapes, or imitating cursive writing.

In *Emergent Literacy*, during the earliest primary years, children begin to use concepts about print and understand principles of text. For example, they know that the text, as well as the picture, conveys meaning; they may be able to read some words like their name or familiar environmental print. In writing, children use letters of the alphabet, usually consonants, to represent syllables.

As children move into the primary years, they progress to the *Developing Literacy* stage. They demonstrate phonemic awareness; apply phonics knowledge to decoding unknown words; and comprehend narrative picture books, poems, short chapter books, and informational and practical materials. They have an increasing understanding of print conventions and of the alphabetic principle. They are developing a sight vocabulary of functional words. In writing, they are composing sentences to make sense and learning to develop ideas in a logical progression. They write about topics of personal interest in various modes, letters, stories, notes, poems, etc. Children are also learning conventional spacing, capitalization, and spelling.

Early Independent Literacy should occur in the early elementary years. Children should set their own purpose for reading–for interest or for information. They discuss and express their ideas orally or in writing on literary, informational, and practical materials. They begin to read independently for extended periods of time. In writing, they record observations and ask and answer open-ended questions about information or ideas; they use detail and organization in their writing; and they produce writing and artwork to reflect personal response and understanding of text.

Independent Literacy occurs by the mid-elementary years. Children should efficiently use strategies for comprehension and they should self-correct quickly. They read confidently and independently in multiple modes of text. In writing, their text is easily understood with good ideas, organization, coherence, and increasing sophistication in the conventions of print.

Expanding Literacy is the goal of later elementary and secondary years. Expanding readers read widely, critically, and frequently for a variety of purposes in a variety of modes. These readers understand literary elements as well as the conventions of expository text; they can read analytically and thoughtfully. In writing, they have voice and control, and they write for a variety of reasons and in diverse modes.

The Importance of Reading and Literature

Reading aloud to students of all ages, every day, is extremely important. It allows students to experience text that is too difficult for them to read independently—exposing them to complex sentence structure, vocabulary, richness of idea, and language they may not otherwise be able to experience. It establishes a sense of the patterns of written language, a basis for literary development, and rich experiences which students can discuss and write about. In addition, it fosters their motivation and love of reading.

Reading itself is the single most valuable activity for developing children's comprehension. The amount of reading that a child does is correlated with growth in reading comprehension, richness of oral storytelling, vocabulary, verbal fluency, content-area achievement, and general knowledge (Anderson et. al., 1984; Adams, Treiman, and Pressely, 1996; Stanovich, 1993).

Through reading multiple modes of text, students encounter new vocabulary, new syntax, new facts, and new perspectives. When they read good literature, they encounter rich ideas and language, and when the reading-writing connection is stressed, they learn to incorporate that richness of language and idea into their own writing. In order to fulfill their greatest potential, all students should be encouraged to read as broadly, frequently, and reflectively as possible.

Middle Level Reading/Literature

The same skills and strategies that are introduced during the elementary program are refined during the middle grades. As students progress through school, they must deal with increasingly difficult material. Many of their reading assignments involve expository material with more complex patterns of organization. Ideas and concepts become more abstract and numerous. Additionally, academic tasks and real-life activities demand that students apply reading strategies independently. Students are expected to read longer selections independently, to organize their information, and to do extended homework assignments based on their readings.

During early adolescence, students are facing numerous personal changes and are eager to investigate the adult world. A sound literary program at this level should build upon students' natural, interests and should help them gain wisdom and insights into making mature choices. Students at this age read poetry, short stories, novels, and scripts with a greater emphasis on interpretation and analysis than during their elementary years.

Secondary Reading/Literature

While attention to all the aspects of reading development begun in the early years continues during the secondary grades, the reading content at secondary becomes much more specific. During the first nine years of communication skills instruction, students read high quality children's and young adult literature that covers a variety of genres and nationalities. Beginning with the ninth grade, however, students are required to take four units of English. The literature component of each emphasizes a specific aspect of literature. These units and the specific literature emphasized in each unit are:

English I - introduction to literature (a study of genre, literary terms, figures of speech),
English II - world literature (primarily non-American, non-British),
English III - American literature,
English IV - British literature.

Students may approach the literature component in a variety of ways, such as a sequential study of courses, a humanities approach, or through advanced placement programs. They may study the literature thematically, chronologically, or according to various critical methods (formalist, cultural/historical, psychological, archetypal).

Teachers are encouraged to expose students to the historical and societal contexts of the works studied and to include representative writers from each of the major literary periods. Works studied must include contemporary as well as classic authors, ethnic minorities, and female writers. Local school systems are encouraged to develop "core, extended, and recreational" reading lists for each course.

Writing Strand

Writing, as defined by the NCTE, is "the process of selecting, combining, arranging, and developing ideas in effective sentences, paragraphs, and, often, longer units of discourse." Writing requires a person to cope with a number of variables: mode, tone, form, purpose, and audience. Mode (method of development) includes narrative, descriptive, argumentative, and expository writing. Tone (the voice of the writer) may range from very personal to quite formal. Form (the shape of the work) may include essays, poetry, letters, and research papers. Purpose (the reason for writing) indicates the writer's intention to discover and express personal feelings and values, to conduct the business of everyday life, to acquire, retain, and communicate information, and to describe, entertain, and persuade. Audience (the intended public) consists of oneself, peers, colleagues, teachers, relatives, and others. During the process, writers must select from and combine these variables as appropriate to the writing tasks.

Writing is also a means for learning. This process is "a valuable tool for learning for all students in all subjects at all ages" (Mayher, Lester, and Pradl, 1983, p. 78). While writing to learn, students discover connections, describe processes, express emerging understandings, raise questions, and find answers. For example, students learn content in science or social studies through keeping a response or process journal, or a learning log.

Additionally, the writing process is a thinking process. To produce a composition, writers must tap memory to establish what they know, review the information they have generated, and translate it into inner speech or print. They must organize main ideas into a logical sequence and discover specific support for those main ideas. Then writers must re-see the whole to find a focus and construct a structural framework for communicating an intended message. Finally, writers transform this network of thought into a written format and evaluate the product. Neither writing nor thinking is linear: thinking and writing are recursive processes. A writer often has to go back to go forward (Olson, 1984).

The Writing Process

Writing should be taught as a natural and integral part of the curriculum. Instruction should encourage whole pieces of writing for real purposes and real audiences (and should include all stages of the writing process). The stages of the writing process include pre-writing, drafting, revising, editing, and publishing.

Pre-Writing

Pre-writing is a crucial stage of the composing process because it prepares a student to approach the writing task with confidence. During this stage, the topic is generated and purpose, audience, and form are clarified. One or more of the following pre-writing techniques may be employed: class discussion, predicting, word banks, student notebooks, drawing, modeling, clustering/webbing, and brainstorming.

In brainstorming, one of the commonly used techniques, students generate as many words, phrases, or ideas as possible on a selected topic and are not allowed to criticize or reject any. Every word, phrase, or idea contributed should be listed on paper, chalkboard, chart, or overhead. Non-related items should be eliminated and those retained should be grouped and organized. The brainstorming activity may be done as a whole class, in small groups, in pairs, or individually.

Teachers need not be afraid of spending too much time on the pre-writing phase. **It is quite conceivable that the pre-writing stage of the activity will take more time than any other stage in the process.** Time spent in pre-writing will strengthen the rest of the process and ensure a more satisfactory final product.

Drafting

Adequate time must also be allotted for drafting. Just as brainstorming is the pouring out of ideas orally, drafting is the pouring out of words on paper to catch the ideas. Students begin with the notes or ideas generated during pre-writing. The first draft may be kept in a journal, writer's notebook, writing center, writing folder, or on a computer disk. Students are also encouraged to explore a topic without grammatical inhibitions or over concern about spelling and punctuation. The teacher's role is to encourage students "to get it down."

Revising

Many students do not see writing as a process. They believe that when they complete their first draft, the writing is finished—they have produced the final product. Students need to recognize the importance of revision, the process of "re-seeing" what has already been written. They must rethink the choices they have already made about the content and add, delete, or rearrange the material. Thus, writing becomes thinking made visible.

The teacher must help students focus and strengthen content and organization as related to audience and purpose. Teachers should encourage students to experiment with and manipulate language to select specific words and create vivid images. Through such techniques as sentence combining, pattern writing, and language play, students learn to use sentence variety, to choose appropriate transitional words or phrases in order to provide coherence and unity, and to expand the ideas in previous drafts with appropriate reasons, details, or examples.

Editing

Editing is the stage in which the writing is made suitable for publication. The teacher must instruct students that the purpose of this phase is to "re-see" once again the content and organization. Additionally, students are to locate and correct errors in punctuation, capitalization, spelling, usage, and sentence structure so that errors in conventions do not interfere with a reader's ability to understand the message. Students who save drafts on computer disks can avoid the possible "write it over" tedium of editing.

Teachers can help students develop editing skills by modeling the editing phase, using a paragraph written on the chalkboard or overhead projector. Additional techniques could include developing with the class an editing checklist and instructing students on the use of dictionaries, thesauri, grammar texts, and usage handbooks. Teachers should also encourage students to work in pairs or small groups in an atmosphere of trust to provide opportunities for peer editing.

Extremely important to the editing process is the management of instruction regarding conventions. The teacher should limit the number of grammar/mechanics skills to be worked on by each student. It is important to focus on one skill at a time. Then through mini-lessons, a specific aspect of grammar/mechanics that has been identified from the sample writings may be taught. Combining and expanding sentences, for example, is an excellent way to help students understand how to connect, equate, subordinate, or contrast ideas.

In view of the widespread agreement of research studies, the conclusion can be drawn that the teaching of formal **grammar** in isolation has a negligible or even harmful effect on the improvement of writing since it usually replaces some instruction and practice in composition. Additionally, formal, "deductive grammar instruction is abstract in nature and generally inappropriate for students in the elementary grades" (**Composition,** 1989, p. 21). By the time most students reach the middle grades, they have developed skills and acquired knowledge about language essential to understanding more complex grammatical structures such as complex sentences and adverbial clauses. At all levels, in order for instruction to be meaningful, it should be inductive and conducted within the context of the student's own writing.

Grammar does not exist outside the sentence. Again, the most meaningful context for studying grammar is through the student's own writing. In this way, judgments about what is "to be preferred and what avoided" can be made concerning grammar—the study of classes of words and their inflections, functions, and relations in the sentence.

"The process whereby writers **mark** sentences is related to the process where they **make** them" (Shaughnessy, 1977, p. 42). Therefore, another important consideration on the editing process is **punctuation,** the control of which is essential to control of meaning. Shaughnessy also suggests that the study of punctuation should not begin with the marks themselves but with the structures that elicit these marks. Thus, control over punctuation becomes not the abstract skill of remembering rules but an understanding of the purpose of punctuation in writing. By increasing the student's opportunities to write in a wide variety of forms for a wide variety of purposes for real readers, the teacher provides the student with meaningful communication opportunities. Instruction, therefore, should focus on the purpose of the punctuation in clarifying the writer's intent.

Instruction in **capitalization** should also take place in the context of the student's writing. Capitalization is used for written communication only, and its purpose is to highlight words to indicate their "specialness." Capitalization is a convention, a widely used and acceptable device or technique, and should be taught as such. Its purpose, like other accepted conventions, is to facilitate understanding by providing a common basis for transcribing a message.

Shaughnessy suggests that some capitalization errors have their origins in **handwriting** problems. Consequently, students must be aware of the importance of legibility to facilitate communication of the intended message. Elements of legible handwriting include letter formation, size and proportion of letters, spacing, slant, alignment of letters on the baseline, and uniform steadiness and thickness of line. Nevertheless, perfection and uniformity are not the primary goals. Handwriting can be both personal and distinctive and still be readable. Instruction should not place so much emphasis on handwriting that the student's struggle toward perfection inhibits the communication of ideas.

Likewise, **spelling** is appropriately addressed as a function of editing. "Probably the greatest aid to developing a spelling conscientiousness is a curriculum which includes frequent writing thereby creating many opportunities for using words and...for evaluating their accuracy" (**Composition**, 1989, p. 23). Young children develop a spelling consciousness through the use of invented spelling—spelling the word as they perceive it. Invented spelling may include several stages beginning even before letter formation with scribbling. Much can be understood even at this stage about directionality and other print concepts.

As children pass through the random letter stage, they know how letters are formed and, therefore, are making an important link between these letters and language. However, they do not understand that letters represent special sounds. At the letter name stage, children are discovering how spelling works. They may begin by writing a string of letters, each one representing a word. As the concept of words develops, children may break a word into phonemes. Consonants will be used more frequently than vowels since the discernment of vowel sounds develops more slowly than consonant sounds.

In the phonetic stage, students' words look more like "real" English words. Students become more aware of features of standard writing such as silent letter and phonological rules. Through this stage and those which often precede, students begin to use conventional spelling for more and more words. Even when they spell most words conventionally, they still make errors, as we all do as adult writers. Few of us always spell every word correctly without using a dictionary.

Although correct spelling is important, beginning writers should be encouraged to write fluently. Spelling ought to be viewed as a facilitator rather than merely one of the products of the writing process. Spelling itself is a process which entails understanding basic principles of how our language works. It remains an important process even though the technology exists for checking spelling.

Errors found in grammar, punctation, capitalization, letter formation, and spelling can provide a wealth of information. Students and teachers can examine errors as clues into the thinking process or circumstances that caused these errors. Thus, errors should be viewed as stages in the learning process.

Publishing

Publishing the writer's work completes the composing process. Publication provides the opportunity for the writer's product to be shared with and/or evaluated by the intended audience or readers in general. Without some type of publication, students may forget or never realize that their writing is meaningful communication. Publication can be as simple as posting papers on the class bulletin board and oral sharing or as elaborate as compiling class and individual books. Other ways in which student work can be shared are school or grade-level newspapers, literary magazines, pen pals, taped stories, and written work exchanged with another class or school.

It is important to note that not every piece that a writer begins will be carried through the entire writing process and polished for publication. However, each student should be encouraged to develop some pieces of writing thoroughly enough to be published. Publishing is an important motivator in working through the stages of the composing process. The purpose of publishing is to reinforce the idea that writing is an act of communication.

Though listed separately and in sequential order, these stages should not always be thought of, taught, or practiced in a forward-moving, linear fashion but may be combined, repeated, or even excluded as a composition is created. In any writing activity the stages are intertwined with a particular stage receiving greater emphasis. Revising and editing may occur during drafting, but they are not the primary focus. During revision, additional pre-writing may become necessary. Publishing is not just a culminating activity. A work can be made public during all stages of the process as students brainstorm in groups, collaboratively draft or read each other's drafts, and participate in peer revising and editing.

Students are encouraged to move comfortably through and among the stages of the writing process. They also should develop a variety of strategies and procedures for composing and of recognizing the progress they are making in the task as a whole. Thus, students will learn to view writing as a means of clear and effective communication.

An Effective Writing Program

In a process-oriented classroom, an essential assumption of writing is that students learn to write by writing. For this to occur, a number of conditions must be present:

- daily opportunities to write,
- daily opportunities to share writing,
- opportunities to select writing topics,
- opportunities to participate in appropriate pre-writing activities,
- opportunities to clarify the writing assignment as to purpose, audience, and format,
- opportunities to experiment with language,
- time allotted for multiple drafting,
- instructional focus on effective writing strategies,
- writing as an extension activity for literature study,
- collaborative writing,
- opportunities to write for authentic purposes and real audiences,
- teacher-student conferences,
- on-going assessment.

Writing Program Content

A balanced writing program requires students to experience and participate in a variety of activities. A K-12 writing program would include process-oriented instruction which would generate products such as:

- autobiographical/biographical sketch
- friendly/business letter
- personal narrative
- fictional story
- journal entry
- lists, labels, and captions
- signs, directions, and rules
- letter of invitation
- fable, folktale, and myth
- skit/sketch
- feature article

- contest entry
- personal response to literature
- process essay
- research report
- book review
- letter to an editor
- precis
- letter of application/resume
- formal speech
- lab reports
- abstract
- scientific/technical writing
- creating instructions
- consumer-writing
- note taking.

Listening and Speaking Strands

Approximately 75 percent of all communicative behavior is devoted to the oral communication process. People in the workplace devote one-third of all working time carrying on face-to-face talk, and corporate managers spend about 60 percent of their time in communicating orally in meetings or on the telephone. Moreover, even with sophisticated electronic communication devices, oral language is still the main way of passing culture from one generation to another. Even with this demonstrated need for effective oral communication, however, 62.9 percent of young people cannot explain how to get to a local grocery store so that another can understand the directions (**Guidelines for Developing Oral Communication,** 1991). There is clearly a need for our schools to spend more time teaching speaking and listening.

Fortunately, students begin to learn oral language skills naturally. They listen to the sounds of adults and other children and internalize language patterns quite early in order to communicate orally themselves. Although the "school" emphasis on reading and writing may create the impression that oral language skills are not important, this is not the case. Oral language is now and is even more likely to be in the future the primary means of acquiring and transmitting information.

Not all children come to school with equal opportunities to develop their oral language skills. Children who have experienced positive feedback to their efforts to use language, and have had opportunities to hear language used in a variety of social contexts, are better prepared to use oral language as a foundation for their reading and writing development. Adults who use oral language not only for survival purposes, but also to delight and entertain, provide children with foundation experiences that will develop vocabulary, syntactic variety, and background knowledge that will facilitate reading and writing. Adults who listen to children and guide their increasing awareness of language teach children that oral communication involves an interplay between sending oral messages and crafting appropriate responses to oral messages received. Communication is not a passive activity. Since some children have limited opportunities for oral language practice in their home environments, and since oral language development continues through at least age twelve, all children can improve their oral language ability with instruction and guidance. It is essential that oral language instruction begin in kindergarten and continue throughout school.

Listening skills must be developed by having something to listen to. Listeners and speakers have to be aware of techniques speakers use to get and hold audience attention and to organize content. Speakers have to realize that differences in dialect and vocabulary can add interest or cause confusion and misunderstanding. Speaking skills must be developed by being aware that speech is intended for an audience and takes place in different social settings. Students with limited social experiences may not understand that certain types of speech are unacceptable in certain settings but are perfectly appropriate in others. Instruction that focuses on both the production and reception of oral language uses the natural connection between the two.

Instruction in oral language in elementary grades should build upon the language the children bring to school. Children who grow up in different kinds of families have very different ideas about what things can be expressed in words and how they may be said (**Primary Program Foundation Document,** 1991). Schools should strive to broaden opportunities for speaking for a variety of purposes. For example, elementary students can be taught to use speech to relate experiences, to explain processes, to support opinions, and to describe experiences as well as for ordinary social conversation. Vocabulary can be developed by exposure to the new content of school subjects and to new experiences through media or field trips, perhaps even by providing exposure to different cultures and customs represented in the classroom. Through group work opportunities students can learn not only to use oral language to gain information for themselves, but also to use language to give information to others. Even in the elementary years students need to evaluate the accuracy and reliability of oral information by asking verifying and clarifying questions.

During the secondary years students continue to acquire orally much of what they learn by listening to classroom lectures and participating in whole group discussions and in group work. They begin to become aware of the "values and prestige factors" that adults associate with speech and may begin to modify their own speech. Often at this age they speak both "standard" and "informal" speech depending on what they see as acceptable in different situations (**Primary Program Foundation Document,** 1991). Teachers can provide students with opportunities to practice more formal speech by having them present oral reports to the class to demonstrate what they have learned or to present options to problems posed for class solutions. Interviewing is an oral technique students need to learn to gather information as well. During a study of more formal oral presentation techniques such as debate, students can learn the importance of gesture, eye contact, and mnemonic devices. This training will help students acquire oral communication skills they will need whether they go directly into the world of work or continue their education. In fact, oral communication proficiency often is the most influential factor in a job or scholarship interview.

Listening, Speaking, and the Writing Process

Writing is language and thought made visible on paper. Before writing proficiency can be developed, attention must be paid to oral language development. Students need to spend time talking about subjects for their writing. In early grades they might discuss as a group favorite selections, authors' use of words, ways of responding to a selection, and possible forms the writing can take. The teacher often leads a whole class or small group discussion to generate a group composition to model the process of putting ideas in written form. Older students may try out ideas individually or ask advice from the teacher or a peer rather than working on a whole class composition. Whatever their age, students need to read their writing aloud to themselves or their peers to "hear" how the text sounds. They ask themselves such questions as: "Does this sound like real conversation?" or "Do these words make sense or say what I mean to get across?" These oral activities reflect the connection between oral and written language.

Fluency and vocabulary, awareness of the grammatical structures and conventions in writing come after the need to put ideas in writing. Once the ideas are in place, students can again use oral communication skills in writing pairs or revision groups to hear other's comments to help them proof and edit their writing to make sure ideas are presented as effectively as possible.

Listening, Speaking, and the Reading Process

Listening and speaking can be used as aids to reading comprehension. Students need to learn that reading is not "calling words correctly," but it is the putting together of meaning from the text they are reading. Class discussions guide students to respond to the meanings of the texts they read. Students can discuss the predictions they made as they read and the confirmations or adjustments to those predictions that occur as they continue to read. After they have finished reading, they can orally summarize their own understanding of a selection and compare the meaning they have gleaned with others. A discussion could reveal differences in interpretation, support for or evidence against a particular interpretation, and lead to increased understanding. Listening and speaking activities allow students to respond to reading during the entire reading process, before (by making predictions), during (by confirming or revising predictions), and after (by checking comprehension with others).

Listening, Speaking, and the Viewing Process

Today's students receive much more of their information from non-print media than did their teachers and parents. Typical students spend much more time watching television, movies, and videos than they spend reading print. Furthermore, this viewing is most often a passive experience done without adult guidance or reflection. Students need experiences in reflecting on the techniques of visuals, the influences of propaganda devices, and the conventions of the different types of visual media. Guided speaking and listening activities can be used to analyze media presented in the classroom as well as to help students develop critical appreciation of the visual media they watch on their own. Special attention should be paid to the dangers of uncritical acceptance of stereotypes often presented in the media, the assumption of violence as a way of resolving conflict, and the unrealistic nature of simplistic resolutions to complex problems and situations.

Differences in the print and film treatment of a novel studied in class could illustrate to students the demands of each medium. Whereas a novel might present character in more depth and include more minor characters and subplots than a film would, settings and action enhanced with the special effects of film could add to the excitement and vicarious enjoyment of the story. A desirable outcome of a class or group discussion could be student awareness that their interpretation of print can be as pleasurable as their interpretation of film.

All the communication skills strands of reading, writing, speaking, listening, and viewing function interdependency. They are all necessary means to acquiring and analyzing ideas, information, and experience. Most students require instruction in achieving their fullest potential to use these communication skills. Depending upon their learning style, some students initially are oriented to one strand more than another. For instance, some students may be more visually oriented while others may be more auditorily oriented. All students should receive instruction in the development of all the communication skills not only because they help students learn in school but also because the communication skills help them learn throughout their entire lives.

Evaluation of Listening and Speaking Skills

Evaluation of listening and speaking skills can take place daily in the form of informal observation of students participation in class discussions and in group work. Such informal evaluation could be in terms of both frequency and quality of speech participation, such as a listing of the number of times a student answered questions or contributed information in class. Students in groups could rate each others' contribution to the group discussion. Teachers could make brief anecdotal comments about students' appropriate or inappropriate listening behavior as well as records of especially good speaking or listening performance observed.

More formal assessment of speaking and listening could involve conferences, checklists, or evaluation sheets to be completed as students present reports or take part in panel discussions or debates. Teachers need to make students aware of the criteria by which their performance is being evaluated. More formal evaluations might include such factors as the purpose of the presentation, awareness of audience (as revealed by vocabulary, posture, eye contact, gestures, voice pitch and volume), organization of the presentation, and accuracy and sufficiency of information. Peer evaluation of listening and speaking is often as effective in motivating students as teachers' evaluation and therefore should be used when appropriate.

Effective Listeners and Speakers

The Effective Listener:

Focuses/Predicts

- Understands the purpose(s) for listening in a specific situation.
- Is prepared to deal with distractions.
- Is ready and willing to be attentive.
- Suspends biases, judgments, and expectations which could interfere with reception of the message.
- Prepares to anticipate/predict the message.

Attends

- Identifies organizational patterns in the communication such as enumeration, cause and effect.
- Recognizes when organization is missing and needs to be imposed on the communication.
- Tries to anticipate the speaker's point(s).
- Summarizes main points.
- Assesses the validity of the speaker's points.
- Draws inferences.
- Keeps in mind the speaker's possible hidden agenda or bias, if known.
- Raises questions when communication is unclear.
- Is sensitive to body language of the speaker.
- Is respectful of the speaker.

Gives Feedback

- Experiences and may express a personal response to the message (aesthetic/emotional/appreciative).
- Comprehends the message.
- Asks for clarification or additional information when needed.
- Critiques constructively on what was presented.
- Evaluates the presentation.

The Effective Speaker:

Plans

- Prepares materials with audience, time, and place in mind.
- Is prepared to handle distractions and changes in time, audience, or circumstances.
- Assembles sufficient material.
- Decides what to say and how to say it.

Presents

- Presents ideas in a clear and organized manner.
- Addresses the audience using appropriate tone and addiction.
- Speaks clearly and with appropriate volume.
- Uses appropriate into nations, gesture, and other nonverbal body language to facilitate communication.
- Tries to keep the interest and attention of the audience.

Receives Feedback

- Is sensitive to the reactions of the audience and ready to adapt presentation as needed.
- Accepts and responds to questions; explains or amplifies statements.
- Is open to constructive criticism.

(**Listening and Speaking.** 1989)

Viewing Strand

In a visually oriented world, the skills of viewing have assumed increasing importance. The technology to transmit visual information and entertainment from anywhere in the world and beyond underscores the importance of developing visual skill – from simple everyday observations to the analysis of multiscreen video images. Visuals shape actions, promote thoughts, and occasionally alter meaning. Students must be aware of these influences so they can effectively use them and function as informed, critical, and responsible citizens in a democratic society.

Visual literacy (both viewing and representing) refers to the ability to comprehend, evaluate, and compose visual messages. Visually literate persons are able to read visual messages, compose visual language statements, and translate from visual to verbal and vice versa. They learn attitudes, behaviors, and questions to ask which enable them to think abstractly and analytically.

Successful viewing depends on the use of multiple cues similar to those in oral and written language. Viewers derive meaning from the semantic and syntactic cueing systems. Semantic cues deal with background knowledge and the meaning expressed in the visual message. Body language, symbolism (both concrete and abstract), and the use of color are examples of the expression of visual semantics. Visual syntax refers to the arrangement of the elements of design to convey a message. Examples of syntactic cues are juxtaposition for contrast, fadeback or flashforward, and close-up or long shot to signal a beginning or ending of a scene or selection.

In order to be effective viewers, learners must understand and be able to consciously manipulate the information available in these two systems. In addition, visual language is different from verbal communication in that it can be more powerful because of the vivid images conveyed by body language or immediate events such as volcanic eruptions, hurricanes, or a winning touchdown. The same visual message can be comprehended by people of various linguistic groups giving it instant and universal appeal. Pictorial traffic signs are examples of universally understood messages. Visual information is usually available immediately rather than being expressed sequentially as in verbal and written form. In addition, much of the material presented in written text must be interpreted visually, such as graphs and charts.

Viewing involves three phases. In order to effectively comprehend, the learners may prepare by previewing the visual, activating or building their background knowledge, and making predictions about the content. During the engagement phase of viewing, the learners may check their understanding by summarizing the message, asking questions, monitoring their comprehension, and revising the purpose. After viewing, the learners may summarize, evaluate, respond to, and apply the information and ideas. They may evaluate whether the purposes have been achieved, or seek additional information.

Composing or representing requires the learners to consider the message to be conveyed, the purpose, and the intended audience. Next, the surface structure of elements of design and the media must be selected to convey the message. These elements may include sound, music, setting, props, costumes, depth, space, shapes, color, nonverbal features, and camera shot composition. In camera shot composition the following should be considered: lighting, cropping, camera angle, shot speed, transition techniques, and sense of distance between viewer and subject. After the visuals have been developed, then the composers evaluate the effectiveness of the delivery and respond to the experience.

Because viewing is an ongoing lifetime activity that extends knowledge and experience and provides enjoyment and pleasure, learners will need to become engaged in a variety of viewing experiences, both in comprehending and composing. The media for visual communication may include: field trips, graphic displays, models, photographs, pictures, transparencies, picture books, newspapers, filmstrips, videotapes, television, charts, maps, diagrams, graphic aids in oral presentation, signs, logos, labels, posters, advertisements, cartoons, carvings, paintings, memos, plays, dance, creative movement, and computers.

In a well-balanced communication skills program, the above experiences will reflect those in the real world. Through these experiences, learners will:

- appreciate various visual forms and compositions,
- compare and contrast visual and print information,
- formulate and clarify personal response to visual messages,
- evaluate the form and content of various visual communications,
- identify and interpret main ideas and relevant details in visual representations,
- apply insights and strategies to become more aware and active viewers in their leisure time,
- relate what is seen to past experience,
- express verbal text or experiences in visual form,
- convey and interpret ideas through non-print media,
- summarize ideas, events, and experiences,
- formulate a personal response about ideas and concepts in books, pictures, and media,
- demonstrate appropriate audience skills for various media productions,
- draw and evaluate conclusions about a visual production,
- recognize the persuasive power of visual representations.

It is an important goal of education for learners to be able to critique and use the dominant media of today. Visual literacy is essential for survival as consumers and citizens in our technologically intensive world.

Notes

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Program Outcomes
English Language Arts

Students who successfully complete a balanced and effective communication skills program are

- self-directed learners who possess
    - a desire to learn for a lifetime,
    - the competence to learn in real life situations,
    - a knowledge of pragmatics in communication,
    - the motivation to produce quality work and products,
    - the disposition to make personal and aesthetic responses.
- collaborative workers who possess
    - the ability to function as both the receiver and sender of information,
    - leadership and group skills to function effectively within interpersonal relationships,
    - sensitivity to social, historical, and cultural diversity,
    - the desire to contribute to the improvement of society.
- complex thinkers who possess
    - awareness and ownership of their learning,
    - the ability to identify, access, and integrate information in a variety of contexts,
    - the ability to reason, make decisions, and solve complex problems in a variety of contexts.

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Competency Goals
English Language Arts

Communication is an interactive process that brings together the communicator(s), the activity or task, and the situation that surrounds them. It is a constructive, dynamic process, not an isolated event or an assembly of a set of sub-skills. Likewise, the communication skills goals reflect whole-thinking processes where overlapping objectives support the comprehension and conveying of information. Though listed separately, the goals are not to be perceived as linear or isolated entities. The goals are interrelated aspects of the dynamic process of communication:

> Competency Goal 1: The learner will use strategies and processes that enhance control of communication skills development.
>
> This goal refers to metacognition, the awareness of and control over one's cognitive processes including commitment, attitudes, and attention. It is knowing about knowing, understanding one's own self as a thinker and learner. Learners who are proficient in this goal are aware of thinking and learning strategies and when to apply them in preparation, engagement, and response.
>
> Competency Goal 2: The learner will use language for the acquisition, interpretation, and application of information.
>
> This goal begins with the acquisition of information and progresses to include interpretation and application. Learners who are proficient in this goal develop an initial understanding by identifying, collecting, and selecting information. In addition, they develop a more complete understanding by organizing and using information.
>
> Competency Goal 3: The learner will use language for critical analysis and evaluation.
>
> This goal focuses on establishing a critical stance to form opinions, make judgments, and evaluate quality. Learners who are proficient in this goal must stand apart from the selection, information, or experience and consider it objectively. In addition, they will be able to use criteria to compare and contrast, assess validity and accuracy, determine value, and judge relevance and importance.
>
> Competency Goal 4: The learner will use language for aesthetic and personal response.
>
> This goal calls for a personal reflection and reaction to selections, situations, and events. Learners who are proficient in this goal are able to respond and reflect from a personal perspective as they connect their background knowledge and experience to selections, situations, and events. They can experience vicariously, recognize and consider cultural and historical significance, and respond critically and creatively.

English Language Arts Competency Goals and Objectives

COMPETENCY GOAL 1: The learner will use strategies and processes that enhance control of communication skills development.

Reading-Writing-Speaking-Listening-Viewing

Objective 1.1 - The learner will apply PREPARATION strategies to comprehend or convey experiences and information.

Focus:
- Apply knowledge of cueing systems (semantic, syntactic, and graphophonic) as appropriate to the nature and purpose of the activity.
- Set personal goals for the task.
- Define and analyze assigned task.
- Anticipate content and organization.
- Relate prior knowledge and personal experiences to topic.
- Generate key words or concepts likely to be used in task.
- Formulate questions to be answered.
- Consider status and intent of source and creator.

Objective 1.2 - The learner will apply ENGAGEMENT strategies to comprehend or convey experiences and information.

Focus:
- Apply knowledge of cueing systems (semantic, syntactic, and graphophonic) as appropriate to the nature and purpose of the activity.
- Give complete attention to the task.
- Skim, scan, and note ideas.
- Search for sense or a "lead."
- Predict outcomes.
- Use personal experience while redefining and composing meaning.
- Review and assess as purpose is defined, clarified, or changed.
- Discuss and make notes.
- Verbalize to "hear" message.
- Use organization conventions as clues to meaning.
- Apply strategies to clarify meaning.

Objective 1.3 - The learner will apply RESPONSE strategies to comprehend or convey experiences and information.

Focus:
- Apply knowledge of cueing systems (semantic, syntactic, and graphophonic) as appropriate to the nature and purpose of the activity.
- Reflect upon the experiences and information.
- Discuss, outline, or summarize new facts, information, or ideas.

- Note agreement or disagreement with ideas presented in the selection or activity.
- Interpret the meaning of, or draw conclusions from, the selection or activity.
- React to language, form, and literary devices.
- Ask and respond to probing questions to clarify earlier responses.
- Identify sources of confusion, problems, differences in interpretation, or new questions that may indicate a need for further study or investigation.
- Assess own performance relative to the purpose.

COMPETENCY GOAL 2 - The learner will use language for the acquisition, interpretation, and application of information.

Reading-Writing-Speaking-Listening-Viewing

Objective 2.1 - The learner will identify, collect, or select information and ideas.

Focus:
- Identify key words and discover their meanings and relationships through a variety of strategies.
- Identify ways words and concepts are developed.
- Identify the story structure or organizational patterns of the text, speech, or visual.
- Recognize details and concepts related to prior predictions and questions.
- Observe and mentally note or record important information.

Objective 2.2 - The learner will analyze, synthesize, and organize information and discover related ideas, concepts, or generalizations.

Focus:
- Select, reject, and reconcile information and ideas.
- Condense, combine, and order information.
- Create an organizational framework for retaining information.
- Form generalizations based on new information.
- Compare information and ideas.
- Analyze the literary and design elements of information and ideas.
- Classify information and ideas on the basis of attributes.

Objective 2.3 - The learner will apply, extend, and expand on information and concepts.

Focus:
- Use information to clarify or refine understanding of historical or contemporary issues or events.
- Solve problems, make decisions and inferences, or draw conclusions based on interpretation of information.
- Follow or produce directions to create a product or develop an idea based on interpretation of information.

COMPETENCY GOAL 3 - The learner will use language for critical analysis and evaluation.

Reading-Writing-Speaking-Listening-Viewing

Objective 3.1 - The learner will assess the validity and accuracy of information and ideas.

Focus:
- Distinguish between vague and precise language.
- Distinguish between representations of fact and of opinion.
- Make judgments about the verifiability of information.
- Identify faulty reasoning.
- Evaluate the reliability of a source.
- Evaluate the appropriateness of persuasive techniques.

Objective 3.2 - The learner will determine the value of information and ideas.

Focus:
- Assess scope, comprehensiveness, and significance of information and ideas.
- Determine practicality and usefulness of information or ideas in light of purposes.
- Recognize bias, emotional factors, propaganda, and semantic slanting.

Objective 3.3 - The learner will develop criteria and evaluate the quality, relevance, and importance of the information and ideas.

Focus:
- Analyze the effects of word choice, sentence structure, and organization.
- Make judgments about the clarity, power, and authenticity of information and ideas.
- Evaluate the effectiveness of the development of plot, theme, setting, and characterization.
- Determine how purpose, point of view, tone, and style affect judgment of the product, information, and ideas.
- Evaluate the use of language patterns and literary devices such as figurative language, dialogue, and symbolism.
- Analyze the use of text aids such as headings, captions, titles, and illustrative material.
- Compare the effectiveness of a selection in relation to others.
- Determine the merit of a selection in terms of its timeliness and timelessness.

COMPETENCY GOAL 4: The learner will use language for aesthetic and personal response.

Reading-Writing-Speaking-Listening-Viewing

Objective 4.1 - The learner will respond to personal situations and events in selections and to personal situations and events.

Focus:
- Express emotional reactions and personal opinions and relate personal values to a selection or experience.
- Relate story structure, plot, setting, theme, characters to own experiences, feelings, and behaviors.

- Consider the varied, connotative, or symbolic meanings of words and visuals.
- Consider the ways language and visuals bring characters to life, enhance plot development, or evoke a response.
- Consider the effects of rhythm, rhyme, repetition, sensory imagery, and figurative language.
- Consider the use of idioms, dialect, and colloquialism.

Objective 4.2 - The learner will respond to the personal, social, cultural, and historical significance of selections or personal experiences.

Focus:
- Recognize a selection or experience as a reflection of its social, cultural, and historical context.
- Associate personal values and beliefs with the content of a selection.
- Consider a selection or experience in the light of situations, conflicts, and themes common to human experience.

Objective 4.3 - The learner will respond critically and creatively to selections or personal experiences.

Focus:
- Participate effectively in creative interpretations of a selection or experience.
- Make relevant, logical, coherent contributions to a discussion.
- Create a product that effectively demonstrates a personal response to a selection or experience.

Glossary

advance organizer	A graphic representation of the major points that assist learners in the comprehension and organization of information from a selection.
alternative assessment	An evaluation other than standardized testing. Alternative assessment may include portfolios, reading folders, interviews, self-evaluations, anecdotal records of observations, book lists, and performance-based samples.
argumentative writing	One of the four chief composition modes. Its purpose is to convince a reader or listener by establishing the truth or falsity of a proposition.
assessment	**1**. The act or process of gathering data in order to better understand the strengths and weaknesses of learning, as by observation, testing, interviews, etc. **2**. Judgments or evaluations made after data are gathered and analyzed.
balanced reading program	Dual in emphasis, stress on both skills and application of skills. A balanced reading program includes instruction in word identification skills as well as instruction in reading comprehension strategies. A balanced program includes reading to whole groups of students, guided reading activities with groups of students, shared reading, and independent reading by individual students.
basal reader series	Textbooks designed to promote increasing competence in reading. Selections usually have controlled vocabulary, controlled readability levels, and selected presentation of skills. Contents often include scope and sequence charts, specific directions for teachers, student workbooks, end-of-unit tests, and end-of-book tests.
big books	Enlarged texts of children's fiction and nonfiction books used in shared reading and other activities to develop reading concepts and strategies.
chapter book	A book long enough to be divided into chapters but not long or complex enough to be considered a novel.
coherence of text	The subjective interpretation by the reader of the extent to which ideas in text appear to "hang together" in a clear, unified pattern.
cohesiveness of text	The links or ties that connect text elements to provide unity and clarity within or between sentences and contribute to the reader's impression of text coherence.

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collaborative learning	Activities in which students work together in groups to achieve a common goal or product.
comprehension	The process by which readers create meaning for the texts they read, images they view, or language they speak. These meanings are built from the connections the reader makes between the new material and his or her prior background knowledge, the ways the reader structures meaning, and decisions the reader makes about what is important or relevant.
consonant blends	Two or more consonant letters (next-door neighbors). The sounds they represent are blended together when pronounced, as the *pl* in *plant* and the *str* in *stream*.
consonant digraphs	Combinations of two consonant letters that represent one sound (e.g., *sh*, *ch*).
context clue(s)	**1**. Information from the immediate textual setting that helps identify a word or word group including phrases, sentences, illustrations, syntax, typography, etc. **2**. The syntactic and semantic information in the surrounding words, phrases, sentences, and paragraphs in a text. Additionally, the background knowledge readers bring to reading, reader's purposes for reading, and the conditions under which material is read all contribute to the reading context. When readers meet unfamiliar words, context cues narrow down the possible word choices, thereby making word identification more efficient.
contextual analysis	The search for the meaning of an unknown word through an examination of its use in context.
creative thinking	The ability to form new combinations of ideas to fulfill a need or to obtain original and otherwise appropriate results.
critical thinking	Logical, reflective thinking that is focused on deciding what to believe or do. It may include analyzing arguments, seeing other points of view, and/or reaching conclusions.
cross-check	A strategy readers use to check one source of information against another (e.g., graphophonic, syntactic, semantic).
cues/cueing systems	Sources of information used by readers to construct meaning. The language cueing systems include the graphophonic system–the relationships between oral and written language (phonics); the syntactic system–the relationship among linguistic units such as prefixes, suffixes, words, phrases, and clauses (grammar); and the semantic system–the meaning system of language.

decodable text	Text written for beginning readers to provide practice in specific phonics elements.
decode	To analyze spoken or graphic symbols of a familiar language to ascertain their intended meaning.
descriptive writing	One of the four chief composition modes. Writing which paints a picture of a person, place, thing, or idea using vivid details.
diagnosis	Assessment of the strengths and weaknesses including the planning of instruction based on diagnostic information.
dialogue journals	Two-way written communication between two or more persons, in which individuals share their thoughts and write reactions to each other's messages.
diphthongs	Two vowels that represent sounds that are glided together during pronunciation, as the *ow* in *cow*, *oi* in *oil*, *ou* in *out*, and *oy* in *boy*.
direct instruction	Instruction provided to teach specific information or processes to students (e.g., guided reading, mini-lessons, etc.).
emergent literacy	Development of the association of print with meaning that begins early in a child's life and continues until the child reaches the stage of conventional reading and writing.
empirical scientific research	Experimental and quasi-experimental designs (where variables are manipulated and their effects upon other variables observed) as well as other forms of research recongized by the Joint Committee on Standards for Educational Evaluation. Research should be comprehensive and thorough, test different theories against each other, be longitudinal in order to look at different variables over time, have controlled variables, and be capable of being replicated (Eichelberger, 1989; Mitzel, 1982).
encode	To change a message in one set of symbols into another set of symbols.
engagement	The phase of the communication process in which the learner checks for understanding, monitors comprehension, uses fix-up strategies, and gives complete attention to the task.
environmental print	Print and other graphic symbols, in addition to books, that are found in the physical environment, as street signs, billboards, television commercials, building signs, etc. *Note*: Environmental print affords opportunities for learners in early phases of emerging literacy to discover and explore the nature and functions of graphic symbols as conveyors of meaning.

fiction	Imaginative literary, oral, or visual works representing invented, rather than actual, persons, places, and events. Some widely recognized types of fiction include mystery, romance, and adventure.
five-minute write	A time during which students write for five minutes without interruption about a particular topic or to answer a question. Sometimes called fast write or burst writing.
generalization	A broad statement derived from or showing a relationship to specifics. Main idea and theme are examples.
genre	A category used to classify literary and other works, usually by form, technique, or content.
grapheme	A written or printed representation of a phoneme, as *b* /b/ and *oy* for /b/ and /oi/ in *boy*. *Note*: In English, a grapheme may be a single letter or a group of letters. It includes all the ways in which the phoneme may be written or printed.
grapheme-phoneme correspondence	The relationship between a grapheme and the phoneme(s) it represents; letter-sound correspondence, as *c* representing /k/ in *cat* and /s/ in *cent*. Phonics as a teaching device in reading instruction concerns grapheme-phoneme correspondences–that is, how to pronounce words seen in print.
graphic organizer	A visual and verbal map of vocabulary and concepts and their relationships designed to assist learners in comprehending selections. Examples are timelines, diagrams, flow charts, outlines, and semantic maps.
graphophonic cues	**1**. Learner's knowledge of the relationship between written language and the sounds of spoken language (symbol sound). A learner would ask the question, "Does the word sound and look right?" **2**. One of the three types of cues readers use to construct meaning; the relationships between written and spoken language (phonics). Referring to the relationship between the orthography and phonology of a language.
guided reading	Reading instruction in which the teacher provides the structure and purpose for reading and for responding to the material read. *Note*: Most basal reading programs have guided reading lessons. This direct instruction promotes students' competence in reading.
high-frequency word	A word that appears many more times than most other words in spoken or written language. *Note*: Basic word lists generally provide words ranked in order of their frequency of occurrence as calculated from a sample of written or spoken text suitable for the level of intended use.

holistic scoring/evaluation	A method of evaluating the quality of a finished piece of writing by assigning score points based on general merit. A variation is focused holistic scoring/evaluation–a method of evaluating the quality of a finished piece of writing based on criteria such as main idea, supporting detail, organization, and coherence.
imagery	**1.** The process or result of forming mental images while reading or listening to a story, viewing a film, etc. **2.** The use of language to create sensory impressions.
indirect instruction	Instruction provided as part of a process (e.g., independent reading, buddy reading, sustained-silent reading, computer-assisted instruction, etc.).
inference	A judgment or conclusion derived from information.
journal	A less private form of diary. It is more readily shared, allows more flexibility, and is more adaptable as a teaching tool. It is especially useful when used to elicit personal responses to reading, issues, and events under study.
language experience	An approach to learning to read in which the student's or groups' own words or oral compositions are written down and used as materials of instruction.
learning log	A subject journal that gives the students an opportunity to respond to new information presented in class, to explore their thoughts and feelings about class discussions and group work, and to react to reading assignments. Learners can evaluate their individual progress as they work on long-range projects and reports; can keep track of important facts, concepts, and vocabulary words; and can use their logs to review for major tests.
letter clusters	Any group of letters within a word which a reader perceives as a unit (e.g., "*-ing, ch, th, thr, ea, oa, eir*").
letter-sound generalizations	Consistent patterns in written language which represent particular sounds.
leveled books	Books grouped and graded for difficulty based on specific text characteristics.
literature anthology	Collection of literature.
literature-based reading	Reading that uses literature as primary material in reading programs and as a springboard to different subjects such as health, science, and social studies and to other media such as newspapers, magazines, and catalogs.

literature-extension activities	Activities designed to enable learners to respond to and deepen/broaden understanding of a selection. These activities may include rereading for different purposes, retelling of stories, comparison charts, illustrating favorite scenes and characters, or acting out a story.
long vowels	Sounds in words that are heard in letter names, such as the *a* in *ape*, *e* in *feet*, *i* in *ice*, *o* in *road*, and *u* in *mule*.
mapping	A strategy in which the relationship among information in the text is put in diagram form in order to clarify, stimulate thinking, or to strengthen memory.
metacognition	Awareness and control of one's thinking. Awareness of thinking and learning strategies and when to apply them.
mode of writing	Any of the major types of writing (e.g., argumentation, description, exposition, narration).
morpheme structure	Smallest unit of meaning (e.g., *book, ful, pre, s', ing*). A free morpheme can stand alone (ex: book, rose). A bound morpheme needs another morpheme to make a word (e.g., *pre, ful, ness*).
narrative (narrative writing)	Text in any form that recounts events or series of events or tells a story. Forms of narrative include personal and imaginative.
nonprint medium	Any medium that creates meaning through sound or images or both, such as photographs, drawings, collages, films, videos, computer graphics, speeches, oral poems and tales, and songs.
onsets	The consonant(s) that come(s) at the beginning of syllables and precede(s) the vowel. Onsets can consist of one, two, or three consonants, as the *s* in *see*, the *st* in *stay*, and the *str* in *street*..
orthography	The study of the nature and use of symbols in a writing system; a conventional writing system in a given language.
phoneme	The smallest sound segments that differentiate one word from another. For example, the word "*man*" has three phonemes–*/m/, /a/,* and */n/*. Some phonemes are represented by combinations of letters (e.g., */th/, /sh/*), and some letters represent more than one phoneme (e.g., *c, g, a, e, I, o, u*).
phonemic awareness	The realization that spoken language is made up of word, rhyme, syllable, and sound segments, and the ability to consciously arrange and rearrange these segments.

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phonic generalization	A statement or rule that indicates under which condition(s) a letter or group of letters represents a particular sound or sounds, as a silent *e* at the end of a word usually indicates that the preceding vowel sound is long, as the *a* in *fate*.
phonics	The system of sound-letter relationships used in reading and writing. The study of the relationship between the letters in written words and the sounds in spoken words.
phonogram	**1**. In word recognition, a letter sequence comprised of a vowel and one or more ending consonants (e.g.,*-ed* in *red, bed, fed*, or *-ake* in *bake, cake, lake*). **2**. The printed symbol of one or more letters representing one speech sound in a given word (e.g., *b, d, p, ch, er, sh, igh, dge, eigh, ough*).
phonology	The study of speech sounds and their functions in a language.
picture book	A book in which the illustrations are as important as the text, and the telling of the story. *Note*: Picture books are often among the first books introduced to children and are usually intended to be read aloud or told to children.
picture cues	The cues to meaning that learners glean from the illustrations in books.
point-of-v	The way in which an author reveals his or her perspective/viewpoint. as in characters, events, and ideas in telling a story.
portfolio	A collection of examples of a student's work which may be used for evaluation and information.
predictable books	Picture books characterized by predictable story lines and the repetition of phrases and rhythm and/or rhyme which enable children to make predictions about content.
prefixes	Meaningful parts attached to the beginning of words, such as *re + play = replay* and *un + cover = uncover*.
preparation	The initial phase of the communication process in which a learner previews the text, draws upon background knowledge, sets purpose for activity, and focuses on the task.
print awareness	Awareness of the characteristics and conventions of written language including the concepts that written language is distinct from speech, conveys meaning, is written from text (left-to-right and top-to-bottom in English); that print in the form of words corresponds to speech; and that white space marks the boundaries of printed words.

print text	Any text that creates meaning through written language such as books, stories, reports, essays, poems, play scripts, notes, and letters.
prior knowledge	Knowledge and experience related to a topic a reader/writer brings to the task.
punctuation	An orthographic system that separates linguistic units, clarifies meaning, and can be used by writers and readers to give speech characteristics to written material.
quasi-experimental	A research design that considerably limits the generalizability of any findings in the sense that the design does not control all but a single variable. Because of the complexities of the learning-teaching situation, most educational research is quasi-experimental in design.
r-controlled vowels	Occur when a vowel in a syllable precedes an *r* which modifies the vowel sound, as the *ar* in *car*, the *er* in *serve*, the *ir* in *first*, the *or* in *forest*, and the *ur* in *fur*.
reader's workshop	Instructional time that includes sharing literature, conducting mini-lessons, having conferences about what the learners have read, and giving time for learners to share what they have read as a whole group or individually.
reading log	A notebook that contains comments and personal responses to the individual selections a learner has read.
reading strategy	**1**. A systematic plan for achieving a specific goal or result. **2**. A practiced but flexible way of responding to reading demands.
receptive language	Language and vocabulary which are learned from the environment by viewing, listening, and reading.
recode	To change a message into symbols, as recoding oral language into writing, or reading an idea into words.
recursive process	Moving back and forth through a text in either reading or writing, as new ideas are developed or problems encountered. In reading a text, recursive processes might include rereading earlier portions in light of later ones, looking ahead to see what topics are addressed or how a narrative ends, and skimming through text to search for particular ideas or events before continuing a linear reading. In creating a written composition, recursive processes include moving back and forth among the planning, drafting, and revising phases of writing.

representing	The presentation aspect of viewing. It is the nonverbal depiction of communication.
response	The phase of the communication process which involves summarizing, reflecting, and evaluating what has been read, written, heard, spoken, represented, or viewed.
response journal	A notebook or folder in which students record their personal reactions to, questions about, and reflections on what they read, view, listen to, and discuss in addition to how they actually go about reading, writing, viewing, listening, and discussing.
retelling	**1**. Restating a story or information in one's own words. **2**. A measure of reading comprehension. *Note*: The purpose of retelling is to gain insight into the reader's ability to interact with, interpret, and draw conclusions from the text.
rhyme	Identical or very similar recurring final sounds in words within or, more often, at the ends of lines of verse.
rhyme awareness	The realization that spoken words contain rhyming sounds. Learners who are aware of the rhymes in words can separate rhyming sounds from words, identify rhyming sounds, and give examples of rhyming sounds and words.
rime(s)	**1**. A vowel and any following consonants of a syllable, as /ook/ in *book* or *brook*, /ik/ in *strike*, and /a/ in *play*. **2**. The sounds heard at the end of syllables and are made up of the vowel and any subsequent consonants. Words that share rimes, such as the *at* in *cat* and *hat*, rhyme.
scaffolding	The support a teacher initially gives to students by assisting and supporting aspects of the learning tasks until students can function independently.
schema (schemata)	A cognitive structure (mental map/file) composed of integrated experience and knowledge which includes the learner's background, beliefs, attitudes, and skills.
self-monitoring	**1**. Self-checking of one's understanding of text. **2**. In reading, the conscious awareness of comprehending the text, marked by self-questioning, reading, and reflection on that text. **3**. In writing, the conscious awareness of the progress of the text, marked by rereading and reflection on features of the text needed to communicate effectively to an audience.

semantic cues (semantics)	**1**. The meaningful relationships among words in phrases, sentences, and paragraphs. Semantic context cues are the basis on which readers decide if an author's message is logical and represents real world events, relationships, and phenomena. When readers use semantic context cues, they ask themselves, "Does this make sense?" **2**. One of the three cueing systems readers use to construct texts. The semantic system focuses on the meaning of texts, where meaning is seen as connections between words (or other linguistic units) and the reader's prior knowledge of language and linguistic forms, understanding of the world, and experience of other texts and contexts.
semantic map	A visual strategy for vocabulary expansion and extension of knowledge by displaying, in categories, words related to other words.
shared reading	**1**. A method which capitalizes on the storytime experience by involving students in a wide variety of experiences with a book. **2**. An instructional strategy in which the teacher involves a group of young children in the reading of a particular big book in order to help them learn aspects of beginning literacy and develop reading strategies (e.g., decoding skills or prediction).
short vowels	Represent the sound of the *a* in *apple*, the *e* in *end*, the *i* in *igloo*, the *o* in *odd*, and the *u* in *bus*. Though other combinations may also be classified as short, these five are typically considered when teachers and learners explore short vowels.
spelling	The process of representing language by means of a writing system or orthography.
SQ3R (survey, question, read, recite, review)	A study technique through which students survey the text to be read, generate questions based on headings and illustrations, read the material, record major points for later reference, recite what they have learned, and then review the material and their notes.
story grammar	The organization of the story. The parts include articulation of the main character's goals, a delineation of the sequence of his or her attempts to achieve these goals, a resolution of the story conflict, and the major character's reaction to the resolution.
strategy	A systematic plan for achieving a specific goal or result.
structural analysis	A process to identify a word by using knowledge of syllables, suffixes, prefixes, root words, contractions, compound words, and other word parts and word forms.
suffixes	Meaningful parts attached to the end of words, such as the *play + ing = playing* and *slow + ly = slowly*.

syllables	Units of pronunciation that include a vowel sound. All words have at least one syllable. To find out how many syllables there are in any word, count the number of vowels you hear as you say the word aloud.
syntactic cues (syntax)	**1**. The way language is structured and ordered within sentences. **2**. Knowledge about word order, the grammatical structure of the language, or the arrangement of textual elements. A learner's use of the syntactic cueing system answers the question, "Does it sound like language?"
systematic	Deliberate plan for instruction. According to a system, not random or haphazard.
temporary spelling	A child's attempt to spell words as he or she is learning to read and write. These spellings reflect generalizations about written language and the child's current level of understanding of letter-sound relationships.
text	Printed communications in their varied forms; oral communications, including conversations, speeches, etc.; and visual communications such as film, video, and computer displays.
thematic units	Units of study designed around a central topic, problem, question, or issue.
think-aloud	To verbalize what is thought while reading, writing or representing.
thinking processes	Relatively complex and time-consuming cognitive operations, such as concept formation, problem solving, and composing.
thinking skills	Relatively specific cognitive operations that can be considered the "building blocks" of thinking. Specific examples are information gathering, organizing, analyzing, and evaluating skills.
trade book	**1**. Fiction and nonfiction books other than literature anthologies and basal readers. **2**. In the United States and Canada, for example, a book published for sale to the general public. **3**. Commercial books, other than basal readers, that are used for reading instruction.
vowel digraph	A spelling pattern in which two or more adjoining letters represent a single vowel sound, as *eigh* for /a/ in *sleigh*, *ea* for /e/ in *bread*, or *aw* for /o/ in *saw*.
word recognition	The quick and easy identification of the form, pronunciation, and appropriate meaning of a word previously met in print or writing. Word identification process of determining the pronunciation and some degree of meaning of a familiar or new word in written or printed form.

writer's workshop	Instructional time that includes mini-lessons, peer/teacher conferences, process writing, sharing time, author's chair, sustained silent reading, and small teaching groups.
writing folder	A folder or notebook that contains writing generated during the various stages in the writing process.
writing strategy	A systematic plan for achieving a specific goal or result. The writing process or specific writing skills become strategic when writers can apply them independently and purposefully.

Adapted from:

Fox, Barbara J. (1996). **Strategies for Word Identification: Phonics from a New Perspective**. Englewood Cliffs, New Jersey. Merrill.

Harris, T. L. and Hodges, R. E. (1995). **The Literacy Dictionary**. Newark, Delaware. International Reading Association.

Standards for the English Language Arts. (1996). Urbana, Illinois. National Council of Teachers of English.

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APPENDIX A

PARALLEL BEHAVIORS WITHIN THE COMMUNICATION PROCESS

	Preparation	Engagement	Response
Listener	Focusing Predicting	Attending	Giving Feedback
Speaker	Planning	Presenting	Receiving Feedback
Reader	Planning	Monitoring Reflecting	Applying Responding
Writer	Prewriting	Drafting Revising Editing	Publishing Sharing
Viewer	Planning	Attending	Applying Responding

(Adapted from **Listening and Speaking,** 1989, p. 23)

APPENDIX B

CONTENT OF A READING AND LITERATURE PROGRAM K-12*

A balanced reading and literature program requires that students experience a variety of literary forms and genres. The pages that follows suggest many opportunities for helping students gain independence in reading for aesthetic and personal response, for information, and for critical analysis and evaluation.

FICTION

Picture books (Mother Goose, ABC and counting books, toy books, concept books, wordless books, pattern books, easy-to-read books)

Distinguishing Features

- Plots are simple, fast-paced, predictable.
- Characters and their actions appeal to young children.
- Illustrations contribute to story line.
- Rhyme, repetition, refrain encourage reading aloud.
- Story and language appeal to sense of humor through word play, nonsense, surprise, exaggeration.
- Illustrations encourage participation through naming, pointing, seeking.

Comments

Picture books provide pleasure for beginning readers, familiarize them with the language of books, and enhance understanding of concepts and abstract ideas. Picture books can also be used with advance readers to introduce story structure, allegory, characterization, or the effects of certain literary devices.

Traditional literature

Folktales

- Time and place are generic (e.g., "Once upon a time in a faraway castle...")
- Stories are not intended to be accepted as true.
- Plots use predictable motifs (ogres, magic, supernatural helpers, quests).
- Story line is frequently a series of recurring actions.
- Characters are one-dimensional.

Traditional literature continues the oral tradition and reveals the values and beliefs of a culture. It provides opportunities for discussing human problems and solutions, morals and values, and contributions of different cultures to our own society. Folklore is a natural source of material for storytelling, creative dramatics, creative writing, and artistic interpretation.

Traditional literature

Myths

- Stories are seen as true in the represented society.
- Plots are usually associated with theology or ritual.
- Accounts frequently explain natural phenomena.

Fables

- Tales concern human conduct with moralistic overcomes.
- Animals exhibit human qualities and behaviors.

Legends

- Plots record deeds of past heroes.
- Stories are presented as true.
- Stories are usually secular and associated with wars and victories.

Epic literature

- Long narratives detail the adventures of a single heroic figure.
- The center of action revolves around the relationship between the heroic figure and the gods.
- The main character symbolizes the ideal characteristics of greatness.
- Many were originally written as poetry or songs.
- Language is lyrical, stately, and rich with images.

Fantasy and science fiction

- Characters or settings depart from what is realistic or expected.
- The author makes the impossible believable through logical framework and consistency, characters' acceptance of the fanciful, and use of appropriate language.
- Characters include humanized animals, good and evil stereotypes, eccentrics, heroes and heroines with magical powers, or extraterrestrial beings.
- Plots may reflect a heroic battle for the common good (high fantasy) or adventures of real characters in an enhanced setting (light fantasy).
- Science fiction relies on hypothesized scientific advancements and raises questions about the future of humanity.

Reading fantasy nurtures the imagination and can help young students come to grips with the differences between reality and truth. For older students, fantasy and science fiction can be useful vehicles for examining issues related to human survival in an uncertain future. Well-written fantasy provides exemplars of well-constructed plots, convincing character-characterization, universal themes, and evocative language.

Realistic fiction

- Content addresses aspects of coping with life (peer relationships, death, identify, family problems, handicapping conditions, courage, survival).
- Plots, settings, and characters reflect those found in real life.
- Endings are not always happy, but reality is frequently relieved by wit and humor.

Realistic fiction that is honest and authentic evokes feelings of personal identifications with the story characters and allows students to discover that their experiences, needs, and emotions are not unique.

Realistic fiction can help students gain insight into their own feelings as well as understand the feelings of others. It can also allow students to try on roles and rehearse possible future experiences. Realistic fiction can stimulate discussion and provide "a way in" to other kinds of reading for reluctant readers.

Historical fiction

- Stories are grounded in history but not restricted by it.
- The historical setting is an authentic and integral part of the story.
- Characters' actions, dialogue, beliefs, and values are true to the historical period.
- Themes include loyalty, friendship, courage, and the conflict between good and evil.

Books and stories of historical fiction can make the past more vivid and interesting to students. They can supplement content-area textbooks at all grade levels, providing knowledge about the people, beliefs, hardships, and events of a particular historical period. Historical fiction helps students to discover their own heritage as well as to see and judge the events of the past.

Mystery

- Tightly woven plots have elements of suspense, danger, or intrigue.
- Plots are fast-paced and frequently involve foreshadowing or flashback.

The best mysteries have well-drawn characters and well-structured plots. Students enjoy readreading them and can improve their problem-solving skills, reading rate, reading for details, and vocabulary development through this traditional form.

Drama

- The plot is carried by the dialogue.
- The number of characters is limited.
- Description and narration are infrequently used.
- Structure is well-defined, with segments clearly divided by acts or scenes.
- The play's ending marks the resolution of the conflict.

Plays appeal to young students for their immediacy and brevity. Their use provides clear illustration of story structure, allows for participation by several students at a time, and encourages dramatic interpretation of other genres.

For all students, the challenge to *write* a play would underscore the uniqueness of this literary form, in which the plot, theme, and characterization are carried by the dialogue.

NONFICTION

Information books and articles

- Information is factual and may be supported by detailed descriptions, examples, definitions, or quotations from authorities.
- Mode of presentation may be expository, narrative, or descriptive.
- Content may include history and geography, science and nature, hobbies, and crafts, experiments, discoveries, and how things work.
- Organization follows a logical pattern and may include textual aids (e.g., table of contents, chapter headings, marginal notes).
- Illustrations clarify text and add authenticity.

Information books and articles are excellent resources for reading, writing, or hands-on activities on topics of interest. They are frequently superior to textbooks in that they may provide sharper focus, present more specialized information, or more clearly reveal the author's point of view. They are an effective vehicle for teaching organizational patterns such as cause-effect, comparison-contrast, time order, or sequence. At all levels, informational material provides provocative content for discussion, from how kittens grow to Shakespeare's England.

Biography

- Subjects include explorers; political heroes and heroines; and achievers in literature, science, sports, the arts, and other disciplines.
- Effectiveness depends on accuracy, authenticity, and an appealing narrative style.

Reading about the achievements of others may help students to see history as the lives and events of real people and to appreciate the contributions of all cultures. For adolescents, biographies may help to increase their own aspirations and provide role models for their own lives. They also serve as a useful vehicle for studying bias, fact vs. opinion, and characterization.

Books of true experience

- Content relates to specific episodes or events from a person's life over a limited time span.
- Author may be the central figure or an objective narrator.

Books of true experience provide an in-depth look at a contemporary or historical event or a series of related events. Students will broaden their understanding of those events and situation by seeing them in their cultural and historical context as well as by observing the effects of those events on a number of people.

Essays, journals, letters, and personal accounts

- Content is based upon or adapted from original documents in diary, letter, or essay form.

Documentary records on such diverse topics as slavery, life in 12th-century England, or songs of the American Revolution provide excellent supplements to historical fiction or resources for creative dramatics.

Historical documents and speeches

- Official statements of social and political significance may include information about the author and setting of each document.

Reproductions of original documents help students discover the language and style of early writers as well as provide clues to the lifestyles and attitudes of people in an earlier time.

Contemporary speeches may be used as a source of information about political and social issues, as a basis of comparison with the language and concerns of the past, and as a vehicle for the study of persuasion.

Newspapers and news magazines

- Writing style is simple and direct.
- Current events are reported accurately and objectively.
- Organization is based on who, what, when, where, why, how.
- Vocabulary is functional.
- Content provides something for every student: news, editorial, comics, new discoveries in science, real math problems, etc.

Newspapers and news magazines are adult media, thereby providing motivation for reluctant readers. The best news stories are models of conciseness and clear writing; the best editorials are models for teaching students to write for a particular audience and purpose. Newspapers are practical, flexible, inexpensive supplements to an English language arts curriculum.

POETRY

Ballads

- Poems give the effect of a song; are told with dramatic flair; usually focus on a single incident; frequently use dialogue, refrain, and repetition.
- Content usually deals with heroic deeds, love, tragedy, feuds.

Ballads continue the oral tradition and are in excellent source of material for dramatization

Narrative

- Verses tell a story.
- Action is fast; plot develops rapidly and is usually related in chronological order.
- Humor is frequently employed.

Story poems are among students' favorite poetic forms. For this reason, they provide an excellent way of capturing students' interest in poetry.

Lyric

- Poems are rhythmic and melodic, evoking images and inspiring memorization.
- Content is usually personal or descriptive.

Lyric poems are frequently the first poems students want to memorize because of their rhythm, beauty of language, and reflection of a poet's personal response to a topic.

Sonnet

- Verses usually contain 14 lines, usually in iambic pentameter, with an elaborate rhyme scheme.

Sonnets are long enough to allow for development of thought, yet they require precision in language and form. For this reason, sonnets provide excellent examples of disciplined use of rhyme, rhythm, and imagery.

Free Verse

- Poem depends upon rhythm and cadence, rather than rhyme, for its effect

The lack of rhyme and less predictable meter of free verse make this form a good introduction to the question "What is poetry?" Students are frequently surprised to learn that rhyme is not a requirement of poetry.

Patterned Poetry

Limerick

- Verses have five lines with first, second, and fifth lines rhyming; third and fourth lines are shorter and rhyme with each other.
- Content is usually humorous, with last line ending in a surprise twist.
- Form consists of 17 syllables within 3 lines (5-7-5).
- Content relates to mood or feelings evoked by nature or the seasons.

Asking students to write their own patterned poetry encourages word play and challenges them to create rhyme and rhythm in a structured format. Both the reading and the writing of patterned poetry demand discipline. Writing it requires searching for the perfect word to express the desired image. Reading it requires constructing inferences to recreate the poem's meaning. Many students enjoy composing patterned poetry in pairs or teams.

Cinquain

- Structure may follow a 2-4-6-8-2 syllable pattern or may follow a simpler form using words per line in a 1-2-3-4-1 pattern.

Diamante

- Structure follows a diamond shape of seven lines, as follows: one noun, two adjectives, three participles, four related nouns or a phrase of four words, three participles, two adjectives, one noun.

Tanka

- Structure follows a 5-7-5-7-7 syllable pattern.

Concrete Poems

- The message of the poem is revealed through the choice and arrangement of words on the page.

Reading and writing concrete poems can help students to appreciate the importance of putting meaning before structure and can aid visual imagery, encourage creative thinking, and make abstract ideas more immediate and tangible. This poetic form is also fun to create at the computer.

* The information in this chart is adapted from the following:
D. Norton, Through the Eyes of a Child, Charles E. Merrill Publishing Co., 1983.
C. Huck, Children's Literature in the Elementary School, Holt, Rinehart, & Winston, 1982.
B. Cullinan, Literature and the Child, Harcourt Brace Jovanovich, Inc., 1981

Notes

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APPENDIX C

ENGLISH LANGUAGE ARTS: GRADE LEVEL COMPETENCIES

The English Language Arts K-12 Competencies are developmentally appropriate indicators of student progress toward the goals and objectives of the **North Carolina Standard Course of Study.** They describe what students should be like, know, and be able to do consistently and accurately at the end of a grade level. The competencies are designed to enable teachers to assess student progress over time and in a variety of situations. Teachers can gather data by observing the processes that students use as they work, by observing students' work products, and by using classroom-based and external measures. The data gathered will allow teachers to make informed instructional decisions and to integrate instruction and assessment.

The competencies, which focus on concepts as opposed to discrete facts, vary according to the complexity of material used and the amount of support given by the teacher. They show the correlation between reading and writing and reflect progression between grades. Since they are not repeated at higher grades but are cumulative, it is imperative that teachers be familiar with the grade levels that precede and follow their own. Therefore, all grade levels, kindergarten through twelfth, are included in this appendix. This access will enable teachers to talk, to plan, and to support each other as they instruct and assess continuous progress toward English Language Arts proficiency.

KINDERGARTEN COMPETENCIES

Book and Print Awareness

Knows parts of books and functions of each part.

Demonstrates understanding of directionality and voice-print match by following print word for word when listening to familiar text read aloud.

Demonstrates understanding of letters, words, and story.

Phonemic Awareness and Alphabetic Principle

Demonstrates understanding that spoken language is a sequence of identifiable speech sounds.

Demonstrates understanding that the sequence of letters in the written word represents the sequence of sounds in the spoken word.

Demonstrates understanding of the sounds of letters and understanding that words begin and end alike (onsets and rimes).

Decoding and Word Recognition

Recognizes and names upper and lower case letters of the alphabet.

Recognizes some words by sight including a few common words, own name, and environmental print such as signs, labels, and trademarks.

Recognizes most beginning consonant letter-sound associations in one-syllable words.

Spelling and Writing

Represents spoken language with temporary and/or conventional spelling.

Demonstrates understanding of literary language
(e.g., "once upon a time," variety of sentence patterns).

Writes most letters of the alphabet.

Writes and/or participates in writing behaviors.

Language, Comprehension, and Response to Text

Uses new vocabulary and language in own speech.

Understands and follows oral/graphic directions.

Demonstrates sense of story (e.g., beginning, middle, end, characters, details).

Connects information and events in text to experience.

Demonstrates familiarity with a variety of types of books and selections.

Reads or begins to read.

The context for these *Competencies* can be found in the Reading Strand of the *English Language Arts Standard Course of Study* which defines reading as a process, not a discrete set of skills.

FIRST GRADE COMPETENCIES

Phonemic Awareness

Can blend the phonemes of one-syllable words.

Can segment the phonemes of one-syllable words.

Can count the syllables in a word.

Can change beginning, middle, and ending sounds to produce new words.

Decoding and Word Recognition

Uses phonics knowledge of sound-letter relationships to decode regular one-syllable words when reading words and text.

Recognizes many high frequency and/or common irregularly spelled words in text (e.g., *have, said, where, two*).

Reads aloud with fluency and comprehension any text that is appropriately designed for the first half of grade one.

Uses pronunciation, sentence meaning, story meaning, and syntax to confirm accurate decoding or to self-correct errors.

Spelling and Writing

Writes all upper and lower case letters of alphabet.

Uses phonics knowledge and basic patterns (e.g., *an, ee, ake*) to spell correctly three- and four-letter words.

Applies phonics to write independently, using temporary and/or conventional spelling.

Uses basic punctuation and basic capitalization.

Composes a variety of products (e.g., stories, journal entries, letters).

Language, Comprehension, and Response to Text

Reads and comprehends both narrative and expository text appropriate for grade one.

Self-monitors in decoding, comprehending, and composing text by using one or two strategies.

Elaborates on how information and events connect to life experiences.

Reads and understands simple written instructions.

Predicts and explains what will happen next in stories.

Discusses and explains responses to *how*, *why*, and *what-if* questions in sharing narrative and expository texts.

Retells new information in own words.

Understands the concept of a sentence.

Responds and elaborates in answering *what*, *when*, *where*, and *how* questions.

Uses new vocabulary and language in both speech and writing.

Demonstrates familiarity with a variety of types of text (e.g., storybooks, poems, newspapers, telephone books, and everyday print such as signs, notices, labels).

The context for these *Competencies* can be found in the Reading Strand of the *English Language Arts Standard Course of Study* which defines reading as a process, not a discrete set of skills.

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SECOND GRADE COMPETENCIES

Decoding and Word Recognition

Uses phonics knowledge and structural analysis (e.g., knowledge of syllables, suffixes, prefixes, root words) to decode regular multi-syllable words when reading text.

Accurately reads most high frequency and many irregularly spelled words in text.

Reads aloud with fluency and comprehension any text appropriate for the first half of grade two.

Spelling and Writing

Correctly spells, using previously studied words and spelling patterns in one's own writing.

Represents with appropriate letters all the sounds of a word when writing.

Begins to use formal language and/or literary language in place of oral language patterns, as appropriate.

Plans and makes judgments about what to include in written products.

With guided discussion, revises to clarify and refine writing.

Given help with organization, writes structured, informative presentations and narratives.

Attends to spelling, mechanics, and format for final products in one's own writing.

Language, Comprehension and Response To Text

Reads and comprehends both narrative and expository text that is appropriate for grade two.

Self-monitors own difficulties in decoding, comprehending, and composing text by using several strategies.

Interprets information from diagrams, charts, and maps.

Recalls facts and details from text.

Reads expository materials for answers to specific questions.

Discusses similarities and differences in events and characters across stories.

Connects and compares information across expository selections to experience and knowledge.

Poses possible *how*, *why*, and *what -if* questions to understand and/or interpret text.

Explains and describes new concepts and information in own words.

Understands the following parts of the sentence: subject, predicate, modifier.

Uses text for a variety of functions, including literary, informational, and practical.

The context for these *Competencies* can be found in the Reading Strand of the *English Language Arts Standard Course of Study* which defines reading as a process, not a discrete set of skills.

Reading Competencies
Grade 3

Third graders read many types of texts – literary, informational, and practical. They distinguish between fact and opinion and note and chart details. These students interpret poetry and infer main ideas, lessons, or morals in a variety of prose. Students in this grade use a variety of reading strategies to construct meaning for text. They choose to read silently for extended periods of time for pleasure and information.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.
Recommends materials for others to read.
Reads materials on a variety of topics.
Reads for a variety of purposes such as for pleasure, to gain information, or to support an opinion.
Describes personal reactions to poetry, informational, practical, and narrative texts.
Perseveres when the task requires reading silently for extended periods of time.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.
Continues to predict based on semantic, syntactic, and graphophonic cues (using increasing knowledge of letter clusters, vowel patterns, affixes, and roots).
Searches, predicts, monitors, and cross-checks using semantic, syntactic, and graphophonic cues independently.
Reads on and rereads to check predictions and clarify meaning.
Uses analogy by identifying a word as being the same or almost the same as a known word.
Uses chunking by using familiar word parts to identify increasingly complex unknown words.
Notes unknown words for later study.
Paraphrases information from text in own words.
Uses text aids such as headings, bold print, and italics.
Focuses on details of print only when meaning is lost.

Reading Comprehension: Constructs meaning from literary informational, and practical texts.
Reads literary, informational, and practical text.
Interprets poetry and recognizes stanza and rhyme as characteristics of poetry.
Infers main idea, lesson, or moral in a variety of prose including fairy tales, tall tales, fables, legends, and myths.
Compares traits of characters as evidenced in the text.
Compares and contrasts characters, events, episodes, and/ or stories.
Compares and contrasts poems, informational selections, or other literary selections.
Distinguishes between fact and opinion.
Recognizes the author's use of figurative language such as simile or metaphor.
Supports ideas by reference to evidence presented in texts.
Summarizes and records information. Notes and charts detail.
Discriminates between cause and effect relationships.
Understands and interprets maps, charts, diagrams, and other visual representations.
Compares and contrasts information in printed and visual form.

Writing Competencies
Grade 3

Third graders write a variety of poetry and prose and can support their ideas with references to their reading. They use a variety of Rewriting activities, revise their writing by adding detail, and recognize incorrect spelling.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Shows originality in word choices.
Uses excitement, humor, suspense, originality in word choice, or some other creative element.
Creates characters and events from outside personal environment.
Writes in response to literature, informational, and practical texts.
Chooses to write for pleasure. Begins to write for extended periods of time.
Incorporates feelings and personal experiences in narrative writing.
Uses vocabulary, ideas, themes, and structures from books in writing:
Records what the student knows, wants to know, and has learned by writing in learning log.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Shows recall of visual patterns by using conventional spelling most of the time.
Uses punctuation conventionally.
Assesses own performance in reading by writing in learning log.
Uses paragraphs to organize information and ideas and maintains the topic focus.
Uses a prewriting activity such as drawing, brainstorming, webbing, or storyboarding independently.
Revises by adding detail for elaboration. Marks incorrect spelling when editing writing.
Edits to verify and self-correct spelling.
Experiments to vary word order in sentences.
Uses concepts of order and time in writing.
Critiques books in reading log/response journal by discussing what makes a good book or why a particular author or genre is preferred.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Writes using characters, setting, problem, and solution.
Explains in writing the main idea, lesson, or moral of a selection when appropriate.
Writes a variety of poetry and prose including fairy tales and personal narratives.
Writes practical texts such as news articles, recipes, directions and interviews.
Writes to support ideas with reference to evidence presented in text.
Expresses meaning inferred from text.

Reading Competencies
Grade 4

Fourth graders continue to read many types of text – literary, informational, and practical pieces. Through reading they can make connections with situations beyond their own exponent. In narrative writing they recognize organizational patterns in text and motives of characters. They can make inferences, draw conclusions, and are learning to support their opinions about what they read. Fourth graders are becoming more skillful at following written directions and in reading for information in content area texts, reference materials, and periodicals.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.
Recognizes reading as a major source of information.
Describes personal reactions to narratives, biographies, and autobiographies.
Offers reasons for the feelings provoked by a text.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.
Interprets new words by reference to suffixes, prefixes, and meaning of word parts.
Uses strategies of sampling, predicting, confirming, and self-correcting quickly, confidently, and independently.
Adjusts reading pace to accommodate purpose, style, and difficulty of material.
Formulates questions and finds relevant information from reading materials.
Summarizes information from literary and informational materials.
Checks for accuracy of information by using a variety of sources.
Uses print and electronic directories such as a table of contents, index, or telephone directories to locate information.
Selects books and other materials that best suit purpose.
Questions to assess point of view.
Organizes and summarizes information by using a technique such as a graphic organizer.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.
Reads literary, informational, and practical text.
Reads materials on a variety of topics beyond personal experiences.
Recognizes the characteristics of narrative text.
Recognizes coherence, logic, and organization in narrative text.
Recognizes relatedness and sufficiency of details in narrative text.
Discusses motives of characters as evidenced in the text.
Recognizes simple themes related to personal experience.
Make inferences and draw conclusions from informational texts and stories beyond personal experiences.
Follows written instructions.
Recognizes that authors and illustrators have individual voices and styles.
Compares oral and written directions.
Analyzes the structure of an informational selection.

Writing Competencies
Grade 4

Fourth graders write narratives, information articles, and practical "how to pieces." They are learning to use more detail, sequence, and description in their narratives. As members of "wading /writing groups" they can give suggestions for revision to each other. They edit their written work for basic sentence formation, usage, mechanics, and spelling.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Writes for extended periods of time.
Selects best pieces of writing and explains reasons for selection.
Evaluates writing against external criteria.
Shares own written work with peers.
Offers reasons for feelings evoked by the writing of others.
Creates characters, settings, problems, and events from outside personal environment.
Uses a personal handwriting style that meets most handwriting needs.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Understands and uses stages in the process of writing with direct teacher support.
Recognizes errors in own and others' writing.
Makes comments about and gives suggestions for adding to another's writing.
Revises by sequencing events and ideas in logical order.
Experiments to combine sentences.
*Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Writes using multiple characters and episodes with teacher support.
Writes literary, information and practical compositions with teacher support.
Writes on a variety of topics.
Assesses own growth in reading by writing in learning log/response journal.
Writes imaginative and personal narratives to develop a logical sequence of events within an overall action.
Writes imaginative and personal narratives that have a coherent, logical, and organized structure.
Writes imaginative narratives with sufficient, related detail that revolve around an event and have a resolution.
Writes personal narratives with sufficient, related detail that recount events experienced, read, or heard about.
Expresses main idea and supporting detail in descriptive writing.
Summarizes new information and ideas and discovers points not understood by writing in learning log.

*See Editing Proficiencies for Grade 4

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Reading Competencies
Grade 5

Fifth graders enjoy literary pieces that are rich in descriptive detail as well as informational and practical texts. They begin to pay more attention to the relatedness and sufficiency of detail, the organization and logic of what they read, and the ways authors support ideas with evident They compare pieces they have mad and defend their wading preferences. They detect the implied motives of characters as revealed in dialogue and action. They detect literary archetypes such as "heroes" and villains." They recognize and use appropriate reading strategies according to purpose and tops of text.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.
Reads literary, informational, and practical materials beyond personal experience.
Reads widely for pleasure for interest, or for learning.
Makes comments and expresses feelings about characters beyond own experiences.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.
Uses print and electronic resource materials such as dictionaries, encyclopedias, and atlases.
Varies reading strategies according to purposes for reading and the nature of the text.
Selects relevant passages or phrases to answer questions without necessarily reading the whole text.
Scans, skims, or reads carefully as appropriate.
Visualizes rich descriptions in written text.

Reading Comprehension: Constructs meaning from literary informational, and practical texts.
Reads literary, informational, and practical text.
Recognizes the characteristics of descriptive text.
Recognizes coherence, logic, and organization in descriptive text.
Recognizes relatedness and sufficiency of details in descriptive text.
Recognizes the similarities and differences between selections.
Recognizes the organizational patterns in informational and practical text.
Discusses implied motives of characters as evidenced in the text.
Describes the function of dialogue in revealing character traits.
Recognizes the presence of archetypal characters such as hero, heroine, or villain.
Recognizes evidence presented in text that supports a recommendation, opinion, or argument.
Supports recommendation, opinion, or argument by reference to evidence presented in text.
Compares information from different sources.
Compares different versions of the same stories from different cultures.
Discusses authors purpose in a selection.
Describes links between personal experiences and arguments and ideas in text.

*Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Writing Competencies
Grade 5

Fifth graders learn to include descriptions in their writing that provide sufficient, related detail to provide a reader with an overall impression. They include concrete images in poetry and in prose. They can complete routine forms they encounter as students and consumers and write social correspondence such as informal letters and invitations. They revise their writing for meaning and clarity and pay particular attention to organization and coherence among the paragraphs of the longer pieces they produce. In addition to revising their own written work, they give their peers revision advice as well.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Compares personal experiences with those expressed in a peer's writing.
Makes comments and expresses ideas about the unique topics and experiences expressed in a peer's writing.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Selects vocabulary from reading and discussion to use in own writing.
Consults available sources to improve or enhance writing.
Revises by refining beginning and ending paragraphs.
Uses variations of letters, print styles or fonts appropriate to task.
Uses concrete images and vivid descriptions in writing poetry and prose.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Writes using multiple characters and episodes with teacher support and independently.
Writes literary, information and practical compositions with teacher support and independently.
Assesses individual performance on a task by writing in learning log.
Expresses main idea and uses details in expository (clarification) writing.
Writes Ascriptions that provide sufficient, related information to provide an overall impression or view.
Writes descriptions that have a coherent, logical, and organized structure.
Completes standard forms requiring personal information.
Writes formal letters, social letters, and invitations and distinguishes between the purposes for each.
Questions the significance, application, or relevance of new information or ideas by writing in reading log.
Reflects about, between, and beyond what is read by writing in reading log.

*Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Reading Competencies
Grade 6

Sixth graders are learning to read materials with more complex characters, settings, and episodes. They read literary, informational, and practical texts from a variety of genres, subjects, authors and styles. Sixth graders learn the importance of organization, supporting evidence, and text aids in expository text and of theme, sound, and figurative language in literary texts. They identify opposing points of view and acknowledge a range of interpretations of texts. They change reading strategies when they encounter difficulties in text and check the reliability of information in reference materials such as periodicals, charts, and maps.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.
Appreciates reading as an essential life skill.
Responds to novels, biographies and informational books through oral, artistic and dramatic projects.
Questions and reflects on issues encountered in texts.
Establishes criteria and justifies own appraisal of a text.
Acknowledges a range of interpretations of text.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.
Changes reading strategies to clarify meaning.
Checks reliability of information through the use of biographies, reference books, periodicals, charts, and maps.
Analyzes use of text aids such as headings, bold print, graphics, and print styles.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.
Reads literary materials with complex characters, settings, and episodes with teacher support.
Reads informational and practical materials with complex vocabulary, concepts, and formats with teacher support.
Reads materials from a variety of genres, subjects, authors, and styles.
Responds to questions about a subject based on prior knowledge.
Recognizes the characteristics of expository (clarification) text.
Recognizes coherence, logic, and organization in expository (clarification) text.
Recognizes relatedness and sufficiency of details in expository (clarification) text.
Recognizes themes beyond personal experiences.
Identifies story structures and organizational patterns of text.
Discovers related ideas, concepts, and generalizations in text.
Recognizes characteristics of a particular author's style.
Recognizes the author's use of sound devises such as alliteration and onomatopoeia.
Recognizes the author's use of figurative language such as personification and hyperbole.
Identifies opposing points of view and main and supporting arguments in text.

Writing Competencies
Grade 6

Sixth graders write using multiple characters and episodes. They write on a variety of topics and in more than one genre. They express main ideas and support them with details in narrative, descriptive, and expository writing. These students use a range of writing forms and are becoming independent users of the writing process with revision focusing on the smooth flow of ideas, deleting extraneous information, and establishing personal voice. They edit their work for errors and use basic grammatical terms while conferencing about their writing with their peers and teacher.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Recognizes the value of writing to clarify thinking, to express emotions, to make decisions, and to solve problems.
Offer reasons for the feelings provoked by text by writing in reading log/response journal.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Understands and uses stages in the writing process with moderate teacher support.
Reposes work to improve the smooth flow of ideas and reorganizes work to make it more readable.
Revises by deleting extraneous information or ideas.
Uses a range of vocabulary and grammatical structures and forms.
Uses basic grammatical terms necessary for conferencing when revising and editing.
Evaluates the revision suggestions of others to maintain personal voice and authorship.
Selects organization and layout of written text that is accurate and appropriate for purpose, audience, and situation.
Uses concrete images and vivid descriptions in expository (clarification) writing.
Writes in a range of writing forms.
Uses repetition of sounds and words in writing poetry.
Chooses narrative, descriptive, and some forms of expository as appropriate to purpose and task.
*Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Writes using multiple characters and episodes independency.
Writes literary, informational, and practical compositions independently.
Writes on a variety of topics and in more than one genre.
Assesses individual performance as the member of a group by writing in learning log.
Develops longer descriptions coherently.
Expresses main idea and uses details in expository (point of view) writing.
Writes expository (clarification) texts that have a coherent, logical, and organized structure.
Writes expository (clarification) texts that provide sufficient, related, elaborated reasons to clarify why a relationship exists between the writer and the subject.
Compares and contrasts ideas and information by writing in learning log.

* See Editing Proficiencies for Grade 6

Reading Competencies
Grade 7

Seventh graders are growing in their ability to read literary texts with complex characters, settings, and episodes. They are becoming more independent as they read informational and practical materials with complex vocabulary, concepts, and formats. These students recognize archetypal characters and themes and can form generalizations about the characteristics of various genre. They recognize authors' uses of language devices and persuasive techniques. Seventh glade students can discuss effective comprehension strategies and can identify faulty reasoning in an argument. They determine the practicality and usefulness of information in light of a purpose.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.
Recognizes reading as a path to vicarious experiences.
Makes relevant, logical contributions to discussion of a selection and its effect.
Provides alternatives to author's point of view.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.
Verbalizes effective and ineffective reading strategies.
Identifies resources that are needed to complete various reading tasks.
Determines the practicality and usefulness of information or ideas in light of purpose.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.
Reads literary materials with complex characters, settings, and episodes with teacher support and independently.
Reads informational and practical materials with complex vocabulary, concepts, and formats with teacher support and independently.
Recognizes the characteristics of expository (point of view) text
Recognizes coherence, logic, and organization in expository (point of view) text.
Recognizes relatedness and sufficiency of details in expository (point of view) text.
Recognizes the presence of archetypal characters and themes.
Recognizes meter as a characteristic of poetry.
Identifies plot and sub-plot in novels and other literary texts.
Forms generalizations about a range of genres, including short story, novel, biography, and autobiography.
Recognizes the author's use of language devices such as sound, diction, and symbolism.
Recognizes persuasive techniques such as personality, tradition, rhetoric, and reason.
Identifies faulty reasoning in text.

Writing Competencies
Grade 7

Seventh graders write point of view pieces that have a coherent, logical, and organized structure and that provide sufficient, elaborated reasons to support a position. They learn to include main ideas and supporting details in argumentative writing. These students use writing logs to record their interpretations of text and to summarize key points already included in the log. Revision focuses on rearranging, deleting, or adding new ideas and paragraphs.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Recognizes that writing can persuade and change people's actions and attitudes.
Recognizes that writing can help explore opposing points of view or all aspects of a problem or issue.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Writes on a variety of topics in more than one mode.
Verbalizes characteristics of effective and ineffective writing.
Uses concrete images and vivid descriptions in expository (point of view) writing.
Identifies resources that are needed to complete various writing tasks.
Revises by rearranging, deleting, or adding new ideas and/or paragraphs.
Uses writing as preparation for contributing to a discussion.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Writes expository (point of view) texts that have a coherent, logical, and organized structure.
Writes expository (point of view) texts that provide sufficient, related, elaborated reasons to support a position.
Expresses main idea and uses details in argumentative writing.
Uses meter when appropriate in writing poetry.
Acknowledges a range of interpretations of text and demonstrates conclusions drawn by writing in reading log/response journal.
Summarizes key points previously recorded in learning log.
Writes using appropriate genre and mode.
Uses a range of vocabulary, grammatical structures, forms and modes, effectively and appropriately for purpose and audience.

*Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Reading Competencies
Grade 8

Eighth graders read literary texts with complex characters, settings, and episodes. They read informational and practical materials with complex vocabulary, concepts, and formats. They synthesize and expand on information from a range of texts and analyze and formulate critical opinions. Eighth graders recognize authors' bias and the characteristics of argumentative texts. These students manage identified resources for their research and assess their own performance.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.

Recognizes that reading can change attitudes and behaviors.

Expresses emotional reactions and personal opinions and relates personal values to a selection or experience.

Acknowledges that there are many reasons for seeking information such as curricular pursuits, personal interests, or consumer needs.

Compares and offers critical analysis of materials presented in the media

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.

Uses knowledge of word formation, sentence structure, or other context clues.

Maps out the plots and character developments in novels and other literary texts.

Supports argument or opinion by reference to evidence presented in sources outside the text.

Assesses own performance relative to material and purpose.

Manages identified resources needed to complete reading tasks.

Formulates questions about a subject based on prior knowledge.

Uses print and electronic catalogs and indices to locate materials.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.

Reads literary materials with complex characters, settings, and episodes independency.

Reads informational and practical materials with complex vocabulary, concepts and formats independently.

Recognizes the characteristics of argumentative (persuasive) text.

Recognizes coherence, logic, and organization in argumentative (persuasive) text

Recognizes relatedness and sufficiency of details in argumentative (persuasive) text.

Extracts ideas embedded in complex passages of text.

Synthesizes and expands on information from a range of texts.

Recognizes the author's bias.

Evaluates appropriateness of persuasive techniques such as personality, tradition, rhetoric, and reason.

Analyzes and formulates a critical opinion about literary and informational material.

Recognizes how sound, diction, symbolism, and figurative language interact to communicate multiple interpretations.

Discusses ways language and visuals bring characters and events to life.

Writing Competencies
Grade 8

Eighth graders write argumentative pieces that have a coherent, logical, and organized structure, and that provide sufficient, elaborated reasons to persuade an audience. They conference during revising and editing, using basic grammatical terms. Eighth graders can write both practical texts and critical opinions. These students edit their written work for sentence formation, usage, mechanics, and spelling.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.

Appreciates writing as a major source for learning through note taking, brainstorming, listing, or writing in journals or learning logs.

Works collaboratively on a written product that expresses a response to a selection or experience.

Writes with ease in both short passages and extended writing.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.

Understands and uses stages in the writing process independently.

Writes on a variety of topics and in more than one genre and mode.

Assesses own performance relative to audience and purpose.

Manages identified resources needed to complete writing tasks.

Revises vocabulary, organization, and tone as appropriate for audience and purpose.

Chooses organization and layout appropriate for audience.

Uses literary devises and design elements as appropriate to describe, support an opinion, or persuade an audience.

Selects vocabulary as appropriate to reduce ambiguities and to indicate shades of meaning.

Uses grammatical terms necessary for conferencing when revising and editing.

*Edits work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.

Writes arguments that have a coherent, logical, and organized structure.

Writes arguments that provide suffcient, related, elaborated reasons to persuade an audience to adopt a position.

Writes practical texts such as letters of request and complaint, application forms, or written directions.

Offers critical opinions or analysis of reading and expresses an alternate point of view of author by writing in learning log.

See Editing Proficiencies for Grade 8

Reading Competencies
English I

Students in English I read a variety of literary and related informational texts. They develop an understanding of literary concepts, elements, and terms as a foundation for further study of world, American, and British literature. They refine their comprehension strategies and use a variety of research processes.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.

Participates effectively in creative interpretations of a selection.
Chooses works by same author or on same topic as works studied.
Compares the effectiveness of a selection in relation to others.
Discovers how a selection creates a world of its own through mood, tone, and style.
Associates personal values, experiences, and beliefs with content of selections.
Knows there are times when the most accurate and up-to-date information is needed.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.

Uses reading strategies successfully in content areas and in practical situations.
Finds alternative resources both print and nonprint for research and problem-solving tasks when first choices are not available.
Explores a variety of research processes to meet information needs.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.

Recognizes supporting and contradictory information related to historical or contemporary issues.
Describes the major events in the life of an author and identifies ways in which those events may be reflected in or may have influenced the work of that author.
Recognizes the presence of archetypal characters, themes, and settings.
Makes inferences and draws conclusions based on interpretation of literary or informational materials.
Identifies how elements or aspects of a text are integrated to convey theme or central idea.
Recognizes why an author might choose one form or mode as more effective than another.
Forms generalizations about various types of poetry such as lyric, epic and narrative.
Explains textual innuendo and undertone.
Analyzes the author's use of narrative techniques such as flashback, foreshadowing, and dramatic irony.
Determines the merit of a selection in terms of its timelessness and timeliness.
Evaluates use of language devices such as sound, diction, figurative language, and symbolism.

Writing Competencies
English I

Students in English I write to clarify their own thinking, express their opinions, and transmit information to others. They write about the types of literature they are studying and write different types of literature themselves. They learn writing techniques to use in other school subjects and in everyday life outside of school.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer

Validates personal experience and feelings through writing.

Works collaboratively on a product that expresses a response to or an analysis of literature.

Connects text with personal experiences and to reflect on issues encountered in text by writing in reading log/response journal.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.

Ends alternative resources both print and non-print for research and problem-solving writing tasks.

Revises by altering mood, plot, characterization, or voice of a work.

Edits writing for errors in sentence formation, usage, mechanics, and spelling.

Writes about literature using narrative, descriptive, expository, and argumentative modes as appropriate to purpose and audience.

Writes in appropriate style and format of content areas with teacher support.

Chooses or creates visuals to enhance written and oral presentations.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.

Writes using complex characters and episodes with teacher support.

Writes to clarify information, give directions, or perform a task.

Analyzes, elaborates, and extends text.

Expresses initial understanding of literary genres and terminology.

Develops an interpretation of literature by exploring motivations, causes, and implications.

Reading Competencies
English II

Students in English II read representative ancient and modern literature from around the world, **excluding** United States and British literature. Students learn of the influences of literature from ancient civilizations on the development of modern literature They study representative pieces of world literature as unique reflections of their time and culture in order to understand historical and contemporary issues and events. They engage in research processes and recognize various documentation techniques.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.

Establishes criteria for evaluating the quality and importance of world literature.

Evaluates pieces of world literature as reflections of time and culture.

Demonstrates appreciation for both the commonality and diversity of human experience as reflected in selections from other times and cultures.

Recognizes the range of experience that reading provides.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.

Uses text organization as an aid to comprehension of increasingly difficult content materials.

Creates clear goals when engaged in complex reading materials and tasks.

Recognizes various documentation techniques in text.

Locates, selects, and rejects important information needed to complete a task.

Engages in a research process to meet information needs.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.

Determines the appropriate level of generalization and excludes irrelevant details in literary, informational, and practical texts.

Analyzes the various ways authors use context to develop new vocabulary such as definition, restatement, example, contrasts, and inference.

Builds on unique cultural background as part of prior knowledge in order to comprehend world literature.

Interprets surface and underlying meanings in a work.

Recognizes the interrelatedness of literary elements in world literature.

Compares common themes in world literature as represented in different selections.

Uses information read in world literature to clarify or refine understanding of historical or contemporary issues or events.

Analyzes representative pieces of literature from countries around the world.

Analyzes the recurrence of motifs and archetypal characters, settings, and themes in world literature.

Compares and evaluates the effectiveness of plot, theme, setting, and characterization in world literature.

Evaluates the use of language patterns and literary devices in world literature.

Recognizes influences of literature from ancient civilizations on the development of literary movements around the world.

Recognizes a world literature selection as a unique reflection of its culture and time.

Writing Competencies
English II

English II students write narrative, descriptive, expository, and argumentative types of writing as appropriate to their purpose and audience. They analyze and evaluate world literature. These students write to clarify their own thinking, express their opinions, and as a tool for learning. They edit their work for errors in sentence formation, usage, mechanics, and spelling.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Uses writing as a tool for learning in all content areas by notetaking, listing, and outlining.
Connects world literature text with personal experiences by writing in reading log/response journal.
Expresses personal opinion of literary selections through critiques or reviews.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.
Creates clear goals when engaged in complex writing tasks.
Writes in appropriate style and format of content areas and with teacher support and independently.
Develops criteria for works to be included in personal portfolio.
Uses one of several writing approaches such as cause and effect, comparison and contrast, or report writing as appropriate to purpose and audience.
*Edits work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary, informational and practical texts to convey meaning, to learn, and to clarify thinking.
Writes using complex characters and episodes with teacher support and independently.
Writes narrative, descriptive, expository, and argumentative text which has a logical, coherent, and organized structure.
Writes text that provides sufficient/related details and/or elaborated reasons.
Develops an initial understanding of world literature text.
Clarifies an understanding of world literature by exploring motivations, causes, and implications.
Evaluates world literature as a reflection of its time and culture.
Analyzes world literature in reference to universal patterns, motifs, and archetypes.
Analyzes the use of literary elements and their interrelatedness in world literature.

*See Editing Proficiencies for English II

Reading Competencies
English III

Students in English III read representative United States literature. They learn of the influences of literature from earlier times on the development of modern literature. They study representative pieces of literature as unique reflections of the American experience in order to understand historical and contemporary issues and events. They determine the appropriate method of research and use both primary and secondary sources.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.

Establishes criteria for evaluating the quality and importance of United States literature.

Expresses personal response to typical American values and beliefs as reflected in selections.

Expresses personal response to unique styles of United States authors.

Uses information read in United States literature to clarify or refine understanding of historical or contemporary issues or events.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.

Reformulates a reading task in the light of available resources.

Set small goals, subgoals, or milestones when engaged in complex reading materials and tasks.

Analyzes the nature of research and problem solving tasks to determine the appropriate method of research.

Develops research skills using both primary and secondary sources.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts

Analyzes text organization to comprehend increasingly complex literary, informational, and practical texts.

Recognizes literary movements and periods of United States literature.

Recognizes styles, topics, and themes characteristic of major United States writers.

Analyzes representative pieces of United States literature.

Analyzes the use of Biblical, classical, and contemporary allusions in United States literature.

Analyzes literary movements and periods of United States literature as a reflection of the American experience.

Compares and evaluates styles, topics, and themes characteristic of major United States writers.

Evaluates the use of language patterns and literary devices in United States literature.

Considers the use of idioms, dialect, and colloquialism in United States literature.

Recognizes a United States literature selection as a reflection of its Cultural, social, and historical context.

Considers a selection in the light of situations, conflicts, and themes common to the American experience.

Builds on unique cultural background as part of prior knowledge in order to comprehend American literature.

Writing Competencies
English III

In English III, students write using a variety of genres, forms, and types. They document sources using simple source notation and complete complex fans. These students extend their writing beyond standard written English as appropriate to the task.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.

Recognizes the range of experience that writing provides.

Connects United States literature with personal experiences by writing in reading log/response journal.

Expresses awareness of personal writing development, both strengths and long-term goals by writing in reading log/response journal.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical texts.

Sets small goals, subgoals, or milestones when engaged in complex writing tasks.

Reformulates a writing task in light of available resources.

Develops criteria to evaluate the quality of works in portfolio.

Extends writing beyond conventions of standard written English as appropriate to task by using dialect, colloquialisms, or contemporary speech.

Writes in appropriate style and format of content areas independently.

Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary informational, and practical texts to convey meaning, to learn, and to clarify thinking.

Writes using complex characters and episodes independently.

Develops an initial understanding of United States literature.

Clarifies an understanding of United States literature by exploring motivations, causes, and implications.

Evaluates United States literature as a reflection of its time and culture.

Analyzes United States literature in reference to universal patterns, motifs, and archetypes.

Analyzes the use of literary elements and their interrelatedness in United States literature

Analyzes founding documents and literature as an expression of the United States experience.

Writes reports and documents sources with simple source notation and bibliography.

Completes complex forms which seek detailed biographical and related information such as resumes, admission forms, and personal essays for college applications.

Reading Competencies
English IV

Students in English IV read representative British literature. They learn of the influences of literature from earlier times on the development of modem British and American literature. They study representative pieces of literature as unique reflections of British experience in order to understand historical and contemporary issues. These students use methods of inquiry and gather information to support a hypothesis/thesis. They establish a schedule for researching goals and assess the extent to which goals/subgoals are accomplished.

Characteristics of the Reader: Exhibits the attitudes, habits, and dispositions of a reader.

Establishes criteria for evaluating the quality and importance of British literature.

Uses information read in British literature to clarify or refine understanding of historical or contemporary issues or events.

Reading Strategies: Uses one or more of the following strategies as appropriate to construct meaning from text.

Establishes time schedule for meeting subgoals and goals when engaged in complex reading materials and tasks.

Assesses the extent to which a subgoal or goal was accomplished.

Acquires and uses methods of inquiry such as discovery learning, experimental inquiry, and investigation in interdisciplinary learning.

Locates, interprets, and presents statistical information.

Compares statistics on the same topic from different sources.

Gathers information to support a hypothesis/thesis and solve relevant problems.

Reading Comprehension: Constructs meaning from literary, informational, and practical texts.

Interprets literary, informational, and practical texts to formulate and test hypotheses and to generate sound theories and meaningful views of the world.

Recognizes literary movements and periods of British literature.

Recognizes styles, topics, and themes characteristic of major British writers.

Identifies influences on and stages of the changing English language.

Analyzes representative pieces of British literature.

Analyzes the use of Biblical, classical, and contemporary allusions in British literature.

Analyzes literary movements and periods of British literature as a reflection of the British experience.

Compares and evaluates styles, topics, and themes characteristic of major British writers.

Evaluates the use of language patterns and literary devices in British literature.

Considers the use of idioms, dialect, and colloquialism in British literature.

Recognizes a British literature selection as a reflection of its cultural, social, and historical context.

Considers a selection in the light of situations, conflicts, and themes common to the British experience.

Recognizes typically British personal values and beliefs reflected in selections.

Recognizes unique styles of British authors in relationship to literary period.

Writing Competencies
English IV

In English IV, students analyze and evaluate the literature they are studying and write different types of literature themselves. They use narrative, descriptive, expository, and argumentative writing for a variety of purposes to include finding information for, planning, and delivering a senior project presentation. They choose appropriate procedures, tools, of equipment and develop criteria for format and visuals as appropriate to a composing task.

Characteristics of the Writer: Possesses the attitudes, habits, and dispositions of a writer.
Connects British literature text with personal experiences by writing in reading log/response journal.
Explains personal choice of writing topics as a reflection of experience, beliefs, and values.

Composing Process: Uses one or more of the following strategies to write literary, informational, and practical tests.
Establishes time schedule for meeting subgoals and goals when engaged in complex writing tasks.
Writes criteria to evaluate quality of extended research project.
Chooses procedures, tools, or equipment (computers and related technologies) as appropriate to composing task.
Develops criteria for format and visuals to support written or oral presentation.
Chooses documentation techniques appropriate to the purpose and audience.
Assesses extent to which a writing subgoal or goal was accomplished.
Edits written work for errors in sentence formation, usage, mechanics, and spelling.

Composing Products: Writes literary, informational, and practical texts to convey meaning, to learn, and to clarify thinking.
Develops an initial understanding of British literature.
Clarifies an understanding of British literature by exploring motivations, causes, and implications.
Evaluates British literature as a reflection of its time and culture.
Analyzes British literature in reference to universal patterns, motifs, and archetypes.
Analyzes the use of literary elements and their interrelatedness in British literature.
Writes critical analysis, supporting hypothesis, thesis, or own ideas with documented sources.
Identifies problems or issues, generates new ideas, and communicates ideas to others.
Justifies a position or persuades and convinces others in a manner that responsibly challenges existing procedures and policies.
Scripts material to support oral presentation of extended research project.

* Editing Proficiencies for Grade 4

Edits for errors in sentence formation – fragments and run-ons.

Edits for errors in usage – subject/verb agreement, pronoun case, double negatives, and use of apostrophes.

Edits for errors in mechanics – paragraph indentation; commas in series and dates and addresses; and beginning and ending quotation marks.

Edits for patterns of misspellings.

*Editing Proficiencies for Grade 6

Edits for errors in sentence formation – misplaced modifiers, incorrect subordination, and incorrect coordination.

Edits for errors in usage – pronoun/antecedent agreement, indefinite pronoun reference, inappropriate homonyms, comparison and superlative degrees.

Edits for errors in mechanics – punctuation and capitalization of quotations and superfluous commas.

Edits for patterns of misspellings.

* Editing Proficiencies for Grade 8

Edits for errors in sentence formation – non-parallel structure.

Edits for errors in usage – shift in tense and point-of-view.

Edits for errors in mechanics – semicolons, colons, and hyphens.

Edits for patterns of misspellings.

* Editing Proficiencies for English II

Edits for errors in sentence formation – on-and-on sentences and omitted words in sentences.

Edits for errors in usage – mistakes in possessives, contractions, and word usage (non-standard meaning).

Edits for errors in mechanics – paragraphing and all necessary commas.

Edits for patterns of misspellings.

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HEALTHFUL LIVING

Standard Course of Study and Grade Level Competencies

K-12

HEALTHFUL LIVING

Public Schools of North Carolina
Department of Public Instruction

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Healthful Living Education

Introduction

The Healthful Living Education program promotes behaviors that contribute to a healthful lifestyle and improved quality of life for all students. The Healthful Living Education portion of the North Carolina Standard Course of Study supports and reinforces the goals and objectives of its three major components—health education, physical education, and alcohol and other drugs. When the concepts of these areas are integrated, the health and well-being of students can be significantly enhanced.

Characteristics of Effective Programs

Today, health status is determined more by one's own behaviors than by advances in medical technology, availability of health services, or other factors; and research demonstrates that education in schools can influence the health-related behaviors of students. This research indicates that Healthful Living Education is most effective and efficient when it

- focuses on health-related behaviors
- has a positive, wellness orientation
- is based on skill development
- approaches health comprehensively
- involves students actively in learning
- matches educational priorities with the appropriate age levels
- is culturally sensitive
- has continuity through the grade levels
- has adequate blocks of time devoted to it
- is taught by well-informed teachers who are comfortable with the content and methods
- is reinforced by school policies, services, and environment, by parents, by peer educators, by community programs and media, and by school staff modeling

Most Important Health Behaviors

Healthful Living Education topics also incorporate consideration of those health behaviors of adolescents that have potentially serious long- and short-term health consequences. The most important behaviors include

- involvement in violent acts
- consuming excessive fat, calories, and sodium, insufficient fiber and variety of foods
- engaging in sexual intercourse which could lead to pregnancy and disease
- insufficient exercise
- attempting suicide
- driving while under the influence of alcohol and other drugs, traveling as a passenger with a driver who is under the influence, driving too fast, and not using passenger restraints or bicycle helmets
- using harmful or illegal substances, including alcohol and tobacco
- engaging in water-related recreation without appropriate floatation devices or supervision, or without skill in swimming and staying afloat, or while using alcohol or other drugs
- responding inadequately to fire emergencies

Healthful Living Education Curriculum Topics

The *Framework for Healthful Living Education* enables all students to gain knowledge and skills about healthful living topics important to their age levels. The following broad healthful living topic areas are the focus of instruction:

- the nature of health, health risks, and health education
- stress management
- substance abuse
- nutrition and weight management
- self-protection
- relationships
- personal fitness
- recreational dance
- games and sports
- developmental gymnastics

Healthful Living Education Skills

Skill development in Healthful Living Education occurs both through study of the skills and thorough application of the skills to the Healthful Living Education topics and behaviors.

- **I. Self-esteem building**
  - A. Self-perception
    - 1. Awareness of sources of self-perceptions
    - 2. Awareness of normalcy of emotions
    - 3. Awareness of negative self-messages
  - B. Self-acceptance
    - 1. Developing realistic expectations for self
    - 2. Converting negative thinking to positive
  - C. Self-efficacy
    - 1. Perceptions of control vs. fate
    - 2. Distinguishing between internal and external control
    - 3. Controlling own behaviors
- **II. Behavior self-management**
  - A. Self-awareness/self-monitoring
    - 1. Using subjective data
    - 2. Using objective data
  - B. Ethics development
    - 1. Acknowledging universal values
    - 2. Developing personal standards
    - 3. Accepting responsibility for own behavior
  - C. Decision-making/problem-solving
    - 1. Assessing the issue
    - 2. Selecting a decision-making method
    - 3. Generating alternatives
    - 4. Identifying costs, benefits, consequences
    - 5. Selecting an alternative
    - 6. Acting on choice
    - 7. Evaluating results
  - D. Planning behavioral strategies
    - 1. Setting a goal
    - 2. Selecting a strategy
      - a. Visualizing
      - b. Modeling
      - c. Rehearsing
      - d. Contracting
    - 3. Self-reinforcement
    - 4. Monitoring progress
    - 5. Evaluating results
- **III. Communicating**
  - A. Empathy
    - 1. Identifying feelings of others
    - 2. Accepting reality of feelings
    - 3. Verbally reflecting feelings
  - B. Assertion
    - 1. Describing situation
    - 2. Expressing own position
    - 3. Specifying acceptable change
  - C. Conflict resolution
    - 1. Choosing a style
    - 2. Respecting different points of view
    - 3. Listening
    - 4. Expressing
    - 5. Negotiating
  - D. Responding to persuasion
- **IV. Using appropriate resources**
  - A. Assessing need for help
  - B. Locating sources of help
  - C. Exercising rights
  - D. Overcoming obstacles

In many cases, healthful living skills are specific applications of generic thinking skills.

Learning Outcomes

The purpose of Healthful Living Education is to provide appropriate instruction for the acquisition of behaviors that contribute to a healthy lifestyle. This can be achieved through a program that reflects the needs of the student throughout his/her school experience. The needs of handicapped students should be addressed through a specifically designed, adapted physical education program.

The Healthful Living Education program, when appropriately reinforced in a comprehensive manner, can be expected to have the following benefits for all students:

- fewer of the risk taking behaviors that contribute to disease, injury and death
- desirable social behaviors and increased levels of self-image
- establishment of the positive behaviors that promote higher levels of health
- higher morale and productivity and less absenteeism by students
- development of appropriate levels of personal fitness and an understanding of the importance of physical activity for maintaining a viable and productive life
- fewer instances of students dropping out of school due to health-related behaviors (e.g., pregnancy, alcohol and drug use)
- more students acknowledging the value of abstinence from sexual intercourse until marriage
- lower health care expenses
- an increased awareness and respect for cultural diversity through participation in physical activities
- better health-educated citizenry, equipped to handle personal and social, environmental, safety, and medical care decisions
- the development of appropriate skills and behaviors that will enable students to be proficient in at least three lifetime activities

Healthful Living Education Grades K-3

Major Emphases

A comprehensive Healthful Living Education program for all students has as its foundation learning experiences which are designed to help each individual develop pro-active health promotion behaviors. The following educational descriptors are reflective of the goals and objectives found in the K-3 Healthful Living Education curriculum:

By the end of grade three:

Students will be aware of the important health risks for their age group and will comprehend some of the major influences on their own health, especially including the role of their own behaviors in regard to eating breakfast and balanced meals; rest and exercise; using seat belts; responding to traffic, fire, and other warning signs, sounds, and symbols; avoiding burns and getting help in an emergency; and the impact of substances, including alcohol and tobacco, on their lives.

Students will be able to demonstrate ways in which they can manage stress, be responsible for their own behaviors, cope with fear and embarrassment, deal with aggression and bullying, resolve disputes, and respect rights of others.

Students will know and understand the value of being physically fit and the types of activities that contribute to total fitness. They will have the ability to monitor resting, exercise, and recovery heart rates and know the components of health-related fitness.

Students will be able to demonstrate fundamental motor skills, develop and refine creative movements, demonstrate manipulative skills, display appropriate behaviors during social situations, and express an enjoyment for movement experiences.

Kindergarten Objectives

1. **Preparatory**

1.1 Describing influences on health, e.g., food, rest, exercise, hygiene/cleanliness.
1.2 Relating health, feelings, and behaviors.
1.3 Explaining health risks for age group.

2. **Stress Management**

2.1 Naming feelings.
2.2 Verbalizing feelings.
2.3 Accepting the normalcy of feelings.
2.4 Identifying and making choices.
2.5 Accepting and carrying out personal responsibilities.

3. **Protecting Self/Others**

3.1 Preventing the spread of germs.
3.2 Using seat belts.
3.3 Describing meanings of traffic signs and signals.
3.4 Responding to warning signs, sounds, and labels.
3.5 Demonstrating the stop, drop, and roll response to burning clothing.
3.6 Getting help in an emergency.
3.7 Identifying items that can burn oneself.

4. **Relationships**

4.1 Distinguishing between safe and risky means of getting attention.
4.2 Seeking and offering help in the home, school, and community.
4.3 Sharing objects and time.
4.4 Recognizing and accepting that each person is unique and special.

5. **Nutrition/Weight Management**

5.1 Identifying foods by using the senses.
5.2 Naming and categorizing foods.
5.3 Identifying health promoting foods.
5.4 Distinguishing between safe and unsafe substances to put in mouth.

6. **Substance Abuse**

6.1 Being careful with medicines.
6.2 Affirming choice not to smoke.

7. Personal Fitness Skills

7.1 Completing a fitness assessment to gather information pertaining to his or her health-related fitness levels.

7.2 Demonstrating the ability to recognize the two suggested sites on the body to monitor the heart rate and to understand that physical activity increases an individual's heart rate.

7.3 Demonstrating knowledge of flexibility through stretching exercises and perform exercises that enhance flexibility in a variety of muscle groups.

7.4 Demonstrating knowledge of muscular strength and endurance through strengthening exercises and perform exercises that enhance muscular strength and endurance in a variety of muscle groups.

8. Recreational Dance Skills

8.1 Demonstrating non-locomotor movements using different parts of the body (such as head, shoulders, arms, legs, chest, feet, and others).

8.2 Demonstrating a variety of locomotor and combination movements.

8.3 Utilizing non-locomotor, locomotor, and combination skills to demonstrate movements in creative sequences and in simple patterned dances.

9. Game and Sport Skills

9.1 Demonstrating a variety of locomotor and combination skills while participating in different games and activities.

9.2 Developing movement control for safe participation in games and sports.

9.3 Demonstrating the skills of catching, kicking, throwing, and striking necessary for participating in a game.

9.4 Developing listening skills and the ability to follow instructions in sequence during a game situation.

10. Developmental Gymnastic Skills

10.1 Demonstrating the concepts of self-space and general space.

10.2 Demonstrating a variety of non-locomotor, locomotor, and combination skills using a variety of shapes typically used in gymnastics.

10.3 Combining these body shapes with a variety of non-locomotor, locomotor, and combination skills in a simple routine.

First Grade Objectives

1. **Preparatory**

    1.1 Summarizing health risks for age group.
    1.2 Predicting consequences of various health-related behaviors.

2. **Stress Management**

    2.1 Differentiating between healthful and unhealthful methods of expressing feelings.
    2.2 Identifying behaviors controlled by self.
    2.3 Demonstrating methods of changing unwanted feelings.
    2.4 Demonstrating methods of dealing with restlessness and tenseness.

3. **Protecting Self/Others**

    3.1 Demonstrating stop and search when entering or crossing a street or road.
    3.2 Following playground, school bus, school ground safety rules.
    3.3 Making emergency phone calls.
    3.4 Identifying firefighters by their appearance.

4. **Relationships**

    4.1 Differentiating between appropriate and inappropriate touch.
    4.2 Seeking adult assistance for inappropriate touch.
    4.3 Recognizing others to whom one is important.
    4.4 Recognizing those who are important to oneself.
    4.5 Respecting the rights of others.
    4.6 Describing ways of resolving conflicts without fighting.
    4.7 Explaining the differences between the acceptability of feelings and acceptability of behaviors.
    4.8 Recognizing that different people have different abilities.

5. **Nutrition/Weight Management**

    5.1 Describing the special importance of breakfast.
    5.2 Choosing healthful breakfast menus from a variety of alternatives.
    5.3 Explaining how foods are the source of all physical parts of the body and the source of body energy.
    5.4 Naming important guides for healthful eating: eat breakfast, eat many different kinds of foods, don't eat too much of any one food.

6. **Substance Abuse**

6.1 Identifying alcohol and tobacco containers as ones to stay away from.
6.2 Reporting but not touching needles/syringes.

7. **Personal Fitness Skills**

7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
7.2 Demonstrating the ability to understand the concept of *pacing* during cardiovascular endurance activities.
7.3 Demonstrating knowledge of flexibility through stretching exercises and perform exercises that enhance flexibility in a variety of muscle groups.
7.4 Demonstrating knowledge of muscular strength and endurance through strengthening exercises and perform exercises that enhance muscular strength and endurance in a variety of muscle groups.

8. **Recreational Dance Skills**

8.1 Demonstrating using non-locomotor, locomotor, and combination skills in a sequence.
8.2 Demonstrating the concepts of time, force, space, and flow.
8.3 Demonstrating the ability to control the body using non-locomotor, locomotor, and combination movements when directed by instrumental cues.
8.4 Using acquired non-locomotor, locomotor, and combination movements to demonstrate movement skills in a creative sequence and in simple patterned dances.

9. **Game and Sport Skills**

9.1 Demonstrating throwing and catching skills necessary for participation in games and sports.
9.2 Demonstrating kicking skills necessary for participation in variety of activities, drills, and/or games.
9.3 Developing striking skills using body parts and extensions necessary for participation in games and sports.
9.4 Developing safety skills and working cooperatively with others in game situations.
9.5 Demonstrating basic jump rope skills.

10. Developmental Gymnastic Skills:

10.1 Demonstrating static and dynamic balances using different body parts.
10.2 Demonstrating forward and backward rolling patterns.
10.3 Performing rolling movements that can be used as *safety rolls*.
10.4 Creating gymnastic routines which focus on balance and rolling patterns with or without equipment.

Second Grade Objectives

1. **Preparatory**

    1.1 Summarizing health risks for age group.
    1.2 Identifying own health-promoting behaviors.

2. **Stress Management**

    2.1 Sharing thoughts and feelings.
    2.2 Distinguishing between evaluations of performance and basic worth.
    2.3 Coping with fear.

3. **Protecting Self/Others**

    3.1 Demonstrating tooth brushing and flossing.
    3.2 Describing benefits of tooth brushing and flossing.
    3.3 Demonstrating the prevention of germ spread through food, water, air, and touch.
    3.4 Practicing measures to prevent contact with the body fluids of others.
    3.5 Getting help in an emergency.
    3.6 Demonstrating the *stop, drop, and roll* response to burning clothing.
    3.7 Handling flammable liquids safely.

4. **Relationships**

    4.1 Recognizing and responding to others' feelings.
    4.2 Judging behaviors as promoting or hindering friendships.
    4.3 Giving and receiving compliments.
    4.4 Apologizing when appropriate.

5. **Nutrition/Weight Management**

    5.1 Categorizing simple and processed foods according to the major food groups in a balanced diet.
    5.2 Identifying the sweets, fats, and oils food group as the least important for healthful eating.
    5.3 Distinguishing between balanced and unbalanced meals in own eating patterns.
    5.4 Predicting characteristics of persons resulting from unbalance of sweets, fats, and oils in diet.
    5.5 Identifying food snacks that are healthy for teeth.

6. Substance Abuse

6.1 Analyzing impact of smoking on self.
6.2 Describing effects of alcohol use on behavior.

7. Personal Fitness Skills

7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
7.2 Recognizing the concept of *recovery heart rate*.
7.3 Demonstrating an understanding of nutrition as related to personal fitness.

8. Recreational Dance Skills

8.1 Exploring various even and uneven rhythmic patterns using non-locomotor, locomotor, and combination movements.
8.2 Demonstrating simple square and folk dances.
8.3 Creating and refining a movement sequence with a beginning, middle, and ending.

9. Game and Sport Skills

9.1 Demonstrating the manipulative skills of catching a ball (or similar objects) while participating in a game or other activity.
9.2 Demonstrating the manipulative skill of trapping while participating in a game or other activity.
9.3 Demonstrating the manipulative skill of striking necessary for participation in a drill, activity, or game situation.
9.4 Developing social behavior skills by helping others needing assistance in game situations.
9.5 Developing social behavior skills dealing with responsibility in Physical Education classes.
9.6 Demonstrating the ability to jump a short jump rope.

10. Developmental Gymnastic Skills

10.1 Demonstrating body control while moving on a low balance beam or similar object.
10.2 Demonstrating a variety of static balance skills on the low beam or similar object.
10.3 Demonstrating examples of inversion using mats and other equipment.
10.4 Creating gymnastic routines using balance and inversion movements.

Third Grade Objectives

1. **Preparatory**

    1.1 Summarizing health risks for age group.
    1.2 Interpreting benefits of health to oneself.
    1.3 Identifying characteristics of responsible health behaviors.

2. **Stress Management**

    2.1 Monitoring own feelings.
    2.2 Associating feelings with thoughts and behaviors.
    2.3 Acknowledging universal standards for behavior.
    2.4 Acknowledging that behavior is changeable.
    2.5 Handling embarrassment.

3. **Protecting Self/Others**

    3.1 Making a plan to escape fire in a building.
    3.2 Avoiding smoke inhalation during a fire.
    3.3 Responding appropriately to weather-related emergencies.
    3.4 Demonstrating first aid for minor problems.
    3.5 Selecting appropriate resources to deal with a variety of health risk situations.

4. **Relationships**

    4.1 Effectively expressing opinions contrary to those of others.
    4.2 Initiating conversation with others.
    4.3 Responding appropriately to teasing and bullying.
    4.4 Showing concern for others.
    4.5 Exercising self-control as a substitute for aggression.

5. **Nutrition/Weight Management**

    5.1 Categorizing foods according to nutrient classes.
    5.2 Selecting meals balanced according to nutrient classes.
    5.3 Describing the roles and sources of water and fiber in healthful eating.
    5.4 Choosing balanced meals away from home.

6. **Substance Abuse**

    6.1 Explaining reasons not to use tobacco products.
    6.2 Assertively declining to smoke.

7. Personal Fitness Skills

7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
7.2 Demonstrating the ability to monitor resting, exercise, and recovery rates.
7.3 Demonstrating the knowledge of the components of health-related fitness.

8. Recreational Dance Skills

8.1 Demonstrating American and International Folk Dances.
8.2 Creating movement sequences to a rhythmic beat while manipulating objects.

9. Game and Sport Skills

9.1 Demonstrating catching and throwing patterns with balls and other appropriate objects.
9.2 Demonstrating the ability to change direction and levels with objects.
9.3 Performing the skills of kicking, dribbling, passing, and trapping.
9.4 Demonstrating the ability to strike with a paddle or other appropriate extensions.
9.5 Developing social behavior skills for participation in games and sports.
9.6 Demonstrating a sense of accomplishment while participating in games.
9.7 Demonstrating the ability to jump a short jump rope.

10. Developmental Gymnastic Skills

10.1 Demonstrating inverted movements on the mats and/or other equipment.
10.2 Performing a variety of forward and backward rolling movements and sequences.
10.3 Creating a variety of gymnastic routines which focus on inversion and rolling sequences using mats and/or other equipment.

Healthful Living Education Grades 4-5

Major Emphases

A comprehensive Healthful Living Education program for all students has as its foundation learning experiences that help each individual develop pro-active health promotion behaviors. The following educational descriptors are reflective of the goals and objectives found in the 4-5 Healthful Living Education curriculum:

By the end of grade five:

Students will be aware of the important health risks for their age group and will comprehend some of the major influences on their own health, especially including the role of their own behaviors in regard to eating healthful snack foods, foods prepared by healthful methods, and foods containing important nutrients. Also, students will be able to healthfully direct their own personal behaviors in regard to use of bicycle helmets, exercising caution as a pedestrian or bike rider, and refusing to be involved in substance abuse.

Students will be able to demonstrate means of managing their own behaviors in regard to impulsiveness, conveying acceptance vs. hostility, dealing with strong feelings, arguing, and adapting to changing relationships and friendships.

Students will be able to state rational counter-arguments to pressure to use drugs, alcohol, or tobacco, explain the dangers of various substances, evaluate the reliability of health information sources, provide first aid for choking victims, describe patterns of normal development associated with puberty, and analyze advertising for health-related products.

Students will be able to name the benefits of personal fitness, describe and demonstrate activities that enhance health-related fitness, demonstrate a variety of flexibility, strength and endurance exercises, demonstrate the ability to use the appropriate intensity and state the guidelines for developing cardiovascular fitness, understand basic nutrition and fitness concepts, and demonstrate an appropriate level of personal fitness.

Students will demonstrate a wide variety of manipulative skills that reflect a refined mastery of ball handling skills, display the behaviors needed for cooperative and other non-traditional games, practice acceptable social behaviors, and create jump rope routines.

Students will develop and refine abilities to demonstrate a variety of motor skills, develop and refine their ability to demonstrate safe balance and weight transfer skills, perform mixer and couple dances, and create dance and gymnastic routines.

Fourth Grade Objectives

1. **Preparatory**

    1.1 Summarizing health risks for age group.
    1.2 Identifying a personal health goal.
    1.3 Using modeling as a strategy to reach a personal health goal.

2. **Stress Management**

    1.1 Associating behaviors with personal and universal standards.
    2.2 Controlling impulsiveness.
    2.3 Distinguishing between needs and wants.
    2.4 Identifying basic human needs as motivators of behaviors.
    2.5 Recognizing impossibility of meeting basic needs by taking health risks.

3. **Protecting Self/Others**

    3.1 Knowing types, sources, benefits of bicycle helmets.
    3.2 Using a helmet when riding a bicycle.
    3.3 Exercising caution when entering or crossing a street or road.
    3.4 Avoiding swerving and wrong-way riding on a bicycle.
    3.5 Providing first aid for choking victims, including the Heimlich maneuver.
    3.6 Analyzing advertising for health-related products.

4. **Relationships**

    4.1 Demonstrating facial expressions, body language, and verbal expressions that convey acceptance or hostility.
    4.2 Explaining value of social support.

5. **Nutrition/Weight Management**

    5.1 Describing the roles of carbohydrates and proteins in healthful eating.
    5.2 Selecting healthful snack foods.
    5.3 Describing the nutrition outcomes of various food preparation methods.
    5.4 Analyzing food labels to determine nutrient content.
    5.5 Describing how emotions can impact eating practices.

6. **Substance Abuse**

    6.1 Describing social, emotional, physical, and mental health risks associated with various substances.
    6.2 Describing dependence.
    6.3 Implementing refusal skills.

7. Personal Fitness Skills

7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
7.2 Naming the benefits derived from participation in a physical fitness program.
7.3 Performing and explain reasons why an individual should pursue activities that can enhance the components of health-related fitness.
7.4 Understanding the relationship between nutrition and exercise in weight management.

8. Recreational Dance Skills

8.1 Demonstrating movements found in folk dance, line dance, or other rhythmic activities.
8.2 Demonstrating movements found in square dance.
8.3 Creating original dances using the elements found in square, folk, line and/or other rhythmic activities.

9. Game and Sport Skills

9.1 Demonstrating ball handling skills.
9.2 Demonstrating accuracy and target skills necessary for participation in a variety of games and sports.
9.3 Developing social behavior skills for participation in games and sports.
9.4 Creating jump rope routines.

10. Developmental Gymnastic Skills

10.1 Developing inverted balances on the mats or other available equipment using two or more body parts.
10.2 Demonstrating a momentary inverted position using the hands for support.
10.3 Creating gymnastic routines that contain balance, inversion, weight transfer, and landing using mats and/or other equipment.

Fifth Grade Objectives

1. **Preparatory**

   1.1 Summarizing health risks for age group.
   1.2 Assuming responsibility for own health.
   1.3 Appraising own health status.
   1.4 Describing concept of wellness.
   1.5 Listing personal benefits of a healthful lifestyle.

2. **Stress Management**

   2.1 Analyzing the impact of emotions on health-related behaviors.
   2.1 Managing strong feelings.
   2.3 Describing patterns of normal physical, social, and emotional development at puberty.
   2.4 Finding means of dealing with boredom.

3. **Protecting Self/Others**

   3.1 Practicing first aid for common conditions.
   3.2 Identifying health risks of environmental choices.
   3.3 Planning behaviors related to environment.
   3.4 Evaluating reliability of health information sources.
   3.5 Explaining smoke detector value and maintenance.

4. **Relationships**

   4.1 Recognizing stereotyping and discrimination.
   4.2 Listing rules for productive arguing.
   4.3 Identifying alternatives to fight or flight as means of resolving interpersonal conflicts.
   4.4 Describing means of adapting to changing relationships and friendships.

5. **Nutrition/Weight Management**

   5.1 Stating the health-promoting roles of calcium, phosphorous, fluoride, and vitamin D.
   5.2 Selecting foods that contribute to dental health.
   5.3 Selecting reliable sources of food and diet information.

6. **Substance Abuse**

- 6.1 Explaining motivations for drug use and healthful alternatives.
- 6.2 Stating short-term effects of tobacco use.
- 6.3 Stating rational counter-arguments to pressure to use drugs, alcohol, or tobacco.

7. **Personal Fitness Skills**

- 7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
- 7.2 Demonstrating flexibility through a physical fitness activity.
- 7.3 Demonstrating the ability to determine an appropriate intensity while participating in cardiovascular activities.
- 7.4 Demonstrating knowledge of the FIT Guidelines to develop appropriate cardiovascular fitness levels.
- 7.5 Demonstrating knowledge how physical activity can reduce body fat.

8. **Recreational Dance Skills**

- 8.1 Demonstrating various dance steps.
- 8.2 Demonstrating various popular folk and square dances.
- 8.3 Demonstrating mixer and couple dances.
- 8.4 Creating a dance combining the elements of speed, intensity, direction, and level.

9. **Game and Sport Skills**

- 9.1 Demonstrating throwing, passing, dribbling, catching, and shooting skills.
- 9.2 Demonstrating forehand and backhand striking skills.
- 9.3 Demonstrating running and jumping skills.
- 9.4 Demonstrating skills necessary for participation in non-traditional games and activities.
- 9.5 Demonstrating the ability to jump rope with a partner or small group.

10. **Developmental Gymnastic Skills**

- 10.1 Creating a variety of combinations using balance skills and rolling movements.
- 10.2 Creating gymnastic routines using balance, jumping, landing, weight transfer, and rolling movements on the mats and/or other equipment.

Healthful Living Education Grades 6-8

Major Emphases

A comprehensive Healthful Living Education program for all students has as its foundation learning experiences which are designed to help each individual develop proactive health promotion behaviors. The following education descriptors are reflective of the goals and objectives found in the 6-8 Healthful Living Education curriculum:

By the end of grade eight:

Students will be aware of the important health risks for their age group and be able to appraise their own health status, health behavior, and potential for health risk. Students will employ a variety of structured thinking processes to solve a variety of health-related problems and make health-related decisions.

Students will be able to enact non-violent conflict resolution strategies, exhibit behaviors productive to group functioning, define rights of individuals in relationships, and communicate feelings and expectations clearly.

Students will be able to protect themselves from health risks arising from fire, substance abuse, and water recreational activities, and they will recognize the value of abstaining from sexual intercourse until marriage Additionally, students will be able to manage stress, comprehend the role of personal responsibility in minimizing health risks, and develop plans to manage health-related behaviors and habits.

Students will know the principles of exercise and diet that contribute to the development of personal fitness. The student should be very comfortable in all aspects of heart rate monitoring (knows his or her resting heart rate, target, heart rate, recovery heart rate), demonstrate FIT Guidelines, and develop sound exercise practices (know safe exercises and contraindicated exercises/practices).

Students will be able to demonstrate the ability to set one's own goals, develop an awareness and respect of cultural diversity through participation in physical activities, and develop abilities to function in group activities.

Students will be able to perform a wide variety of body management skills, create gymnastic routines on the mats and other available equipment, and have the motor skills needed to perform recreational dances (square dance, international folk dance, and social dance).

Student will be able to perform the skills necessary for participation in a variety of team, dual, and individual lifetime activities.

Guidelines for Instruction Regarding Abstinence until Marriage and Sexually-Transmitted Diseases, Including HIV/AIDS

North Carolina General Statute 115C-81 (e1), ratified July 29, 1995, sets forth numerous requirements for both the State Board of Education and for local boards of education. The following general guidelines have been extracted from this legislation and apply to any instruction regarding abstinence until marriage and sexually-transmitted diseases, including HIV/AIDS.

- present factually accurate biological or pathological information that is related to the human reproductive system
- focus on the benefits of abstinence until marriage and the risks of premarital sexual intercourse
- establish abstinence from sexual intercourse outside of marriage as the expected standard for all school-age children
- offer positive reinforcement for abstinence
- provide opportunities that allow for interaction between the parent or legal guardian and the student
- assure that students are aware of the difference between risk reduction through use of contraceptives and/or condoms and risk elimination through abstinence
- for any instruction concerning contraceptives or prophylactics, provide accurate statistical information on their effectiveness and failure rates for preventing pregnancy and sexually-transmitted diseases, including HIV/AIDS, in actual use among adolescent populations
- inform students of the current legal status of those homosexual acts that are a significant means of transmitting diseases, including HIV/AIDS
- assure that students understand that a mutually faithful, monogamous, heterosexual relationship in the context of marriage is the best lifelong means of avoiding diseases transmitted by sexual contact, including HIV/AIDS
- be aware that the instruction in the use of and/or demonstration of condoms is a part of a comprehensive sex education program. Before a comprehensive sex education program is adopted, the local board of education shall conduct a public hearing and make all instructional materials available for review by parents or legal guardians for at least 30 days before the public hearing and 30 days after the hearing.

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Sixth Grade Objectives

1. **Preparatory**

    1.1 Explaining health risks for age group.
    1.2 Accurately describing the incidence of high-risk behaviors for age group.
    1.3 Appraising own health behaviors.

2. **Stress Management**

    2.1 Developing criteria to assess the significance of a decision/problem.
    2.2 Projecting behavioral consequences as a means of anticipating problems.
    2.3 Coping with failure.
    2.4 Initiating requests for help or assistance.
    2.5 Explaining sources of self-concept.
    2.6 Demonstrating stress management through breathing patterns, muscular relaxation, directing thoughts.
    2.7 Using a structured thinking process to make decisions and solve problems.

3. **Protecting Self/Others**

    3.1 Identifying highest risk behaviors for drowning.
    3.2 Explaining principles of water survival.
    3.3 Identifying practices that prevent spinal cord injury.

4. **Relationships**

    4.1 Communicating own feelings.
    4.2 Demonstrating attention to and interest in expressions of others.
    4.3 Enacting non-violent conflict resolution strategies.
    4.4 Describing behaviors conducive to and counterproductive to group functioning.
    4.5 Defining rights of individuals in relationships.

5. **Nutrition/Weight Management**

    5.1 Identifying the food groups and recommended servings from the food guide pyramid.
    5.2 Analyzing the relationships among diet, exercise, and body weight.
    5.3 Selecting foods high in vitamin A, iron, and vitamin C.

6. Substance Abuse

- 6.1 Evaluating advertising for tobacco and alcohol.
- 6.2 Describing common antecedents of substance abuse.
- 6.3 Identifying short- and long-term benefits of resistance to substance abuse.
- 6.4 Delineating the sequence of substance abuse that can lead to serious health risks.
- 6.5 Explaining the immediate social and physical consequences of tobacco and other drug abuse.

7. Personal Fitness Skills

- 7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
- 7.2 Demonstrating an understanding of proper stretching exercises and muscle strength/endurance exercises.
- 7.3 Demonstrating the ability to perform self-paced aerobic activity, keeping in an appropriate target heart rate zone, and monitoring recovery rate after the activity.
- 7.4 Demonstrating the knowledge of how to prepare the body before and after vigorous exercise.

8. Recreational Dance Skills

- 8.1 Demonstrating square, folk, and social dance skills.
- 8.2 Creating short movement compositions.

9. Game and Sport Skills

- 9.1 Demonstrating and refining team sport skills.
- 9.2 Demonstrating and refining dual sport skills.
- 9.3 Demonstrating and refining individual sport skills.

10. Developmental Gymnastic Skills

- 10.1 Performing rolling combinations with gymnastic movements.
- 10.2 Creating routines that focus on rolling combinations with variations of positions.

Seventh Grade Objectives

1. **Preparatory**
    - 1.1 Explaining health risks for age group.
    - 1.2 Appraising own health status.
    - 1.3 Differentiating between objective and subjective perceptions of personal health risk.
    - 1.4 Explaining the concept of cumulative risk in regard to disease and injury.
    - 1.5 Accurately describing the incidence of high-risk behaviors for age group.

2. **Stress Management**
    - 2.1 Describing examples of self-deception.
    - 2.2 Using positive imaging to maintain self-esteem.
    - 2.3 Distinguishing among effort, ability, and chance as factors in success and failure.
    - 2.4 Recognizing and managing habits.
    - 2.5 Anticipating and monitoring personal stressors.
    - 2.6 Explaining methods of managing stress by minimizing exposure.

3. **Protecting Self/Others**
    - 3.1 Extinguishing fires correctly.
    - 3.2* Understanding that a mutually faithful monogamous heterosexual relationship in the context of marriage is the best lifelong means of avoiding sexually-transmitted diseases.
    - 3.3* Explaining the effectiveness and failure rates (some studies indicate failure rates range from 2% to 30%) of condoms as a means of preventing sexually-transmitted diseases.
    - 3.4* Recognizing abstinence from sexual intercourse until marriage as the only certain means of avoiding out-of-wedlock pregnancy, sexually-transmitted diseases, and any other health and emotional problems associated with sexual intercourse.
    - 3.5* Describing the benefits of abstinence from sexual intercourse until marriage.
    - 3.6* Explaining the risks of premarital sexual intercourse.
    - 3.7* Demonstrating techniques and strategies for becoming or remaining abstinent by dealing with peer pressure.

**Each school year, before students may participate in any portion of (i) a program that pertains to or is intended to impart information or promote discussion or understanding in regard to the prevention of sexually-transmitted diseases, including Acquired Immune Deficiency Syndrome (AIDS), or to the avoidance of out-of-wedlock pregnancy, (ii) an abstinence until marriage program, or (iii) a comprehensive sex education program, whether developed by the State or by the local board of education, the parents and legal guardians of those students shall be given an opportunity to review the objectives and materials. Local boards of education shall adopt policies to provide opportunities either for parents and legal guardians to consent or for parents and legal guardians to withhold their consent to the students' participation in any or all of these programs.*

4. **Relationships**

4.1 Exercising social and interpersonal persuasion.
4.2 Identifying feelings in communications of others.
4.3 Clarifying expressions of others.
4.4. Expressing expectations to others.

5. **Nutrition/Weight Management**

5.1 Summarizing healthful dietary guidelines.
5.2 Comparing own eating habits to dietary guidelines.
5.3 Identifying cues to own eating patterns.
5.4 Describing means of controlling unwanted cues to eating patterns.
5.5 Consuming healthful breakfasts.

6. **Substance Abuse**

6.1 Qualifying the contribution of alcohol to death and injury from vehicle crashes, pedestrian injury, homicide, suicide, robbery and assault, drowning, burns, and falls, and to job absenteeism, job loss, and job injury.
6.2 Describing the variety of health risks associated with the injection of substances.

7. **Personal Fitness Skills**

7.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
7.2 Demonstrating knowledge of the terms *aerobic* and *anaerobic*.
7.3 Demonstrating cardiovascular endurance in an activity other than running.
7.4 Demonstrating knowledge of flexibility and muscular strength and endurance.

8. **Recreational Dance Skills**

8.1 Demonstrating American Folk Dance and International Folk Dance forms.
8.2 Demonstrating country western dance and social dance forms.
8.3 Creating dances that use the various elements of time, space, force, and flow.

9. **Game and Sport Skills**

9.1 Demonstrating and refining team sport skills.
9.2 Demonstrating and refining dual sport skills.
9.3 Demonstrating and refining individual sport skills.

10. Developmental Gymnastic Skills

10.1 Demonstrating vaulting skills using available equipment (vaulting horse, folded mats, padded bench, vaulting box, or other suitable equipment).
10.2 Creating a short gymnastic routine using mats and/or other equipment.

Eighth Grade Objectives

1. Preparatory

1.1 Explaining health risks for own age group.
1.2 Appraising own health status.
1.3 Identifying automobiles, alcohol, and handguns as the three factors associated with the majority of fatal and serious injuries.
1.4 Predicting the potential for health risk in a variety of situations.
1.5 Accurately describing the incidence of high-risk behaviors for age group.

2. Stress Management

2.1 Developing systematic short- and long-term health goal achievement plans.
2.2 Analyzing own defense mechanisms.
2.3 Accepting responsibility for own behaviors.
2.4 Employing a variety of structured thinking processes to solve problems and make decisions.

3. Protecting Self/Others

3.1 Demonstrating basic CPR techniques and procedures, including community resources for becoming certified in CPR and including the Heimlich maneuver.
3. Understanding that a mutually faithful monogamous heterosexual relationship in the context of marriage is the best lifelong means of avoiding sexually-transmitted diseases.
3.3* Explaining methods of contraception, their effectiveness and failure rates (some studies indicate condom use failure rates ranging from 2% to 30%), and the risks associated with different methods of contraception.
3.4* Demonstrating skills and strategies for remaining or becoming abstinent from sexual intercourse.
3.5 Projecting potential personal health consequences of global environmental problems.
3.6 Selecting personal behavior goals and strategies contributing to environmental improvement.
3.7 Evaluating media reports of health and medical research.

**Each school year, before students may participate in any portion of (i) a program that pertains to or is intended to impart information or promote discussion or understanding in regard to the prevention of sexually-transmitted diseases, including Acquired Immune Deficiency Syndrome (AIDS), or to the avoidance of out-of-wedlock pregnancy, (ii) an abstinence until marriage program, or (iii) a comprehensive sex education program, whether developed by the State or by the local board of education, the parents and legal guardians of those students shall be given an opportunity to review the objectives and materials. Local boards of education shall adopt policies to provide opportunities either for parents and legal guardians to consent or for parents and legal guardians to withhold their consent to the students' participation in any or all of these programs.*

4. Relationships

4.1 Developing and maintaining confidants and confidential relationships.
4.2 Describing constructive and risky means of expressing independence.

5. Nutrition/Weight Management

5.1 Analyzing information found on the *Food Facts* food label.
5.2 Assessing own nutrition/weight status.
5.3 Selecting a realistic nutrition/weight management goal and strategy.
5.4 Selecting healthful fast foods.
5.5 Relating body image to self concept and nutrition behaviors.

6. Substance Abuse

6.1 Explaining the relationship between amount and frequency of a substance consumed and effect on behavior.
6.2 Identifying resources for assistance with problems involving alcohol, tobacco, and other substances.
6.3 Describing the special risks associated with alcohol use and vehicles.

7. Personal Fitness Skills

1.1 Completing a health-related personal fitness test and achieving fitness scores at an acceptable level.
1.2 Demonstrating knowledge for maintaining a balance between the components of fitness.
1.3 Demonstrating knowledge concerning the importance of proper nutritional practices.
1.4 Demonstrating cardiovascular fitness and the proper use of heart rate monitoring.
1.5 Demonstrating knowledge of the principles of training.

8. Recreational Dance Skills

2.1 Demonstrating the ability to participate in contemporary and popular dances.
2.2 Demonstrating square, folk, and social dance skills.
2.3 Creating original dances using the elements found in recreational dance.

9. Game and Sport Skills

3.1 Demonstrating and refine team sport skills.
3.2 Demonstrating and refine dual sport skills.
3.2 Demonstrating and refine individual sport skills.

10. Developmental Gymnastic Skills

4.1 Performing a variety of balance movements in combination with rolling and/or weight transfer skills.

4.2 Creating and perform gymnastic routines using mats and/or other equipment.

Healthful Living Education Grades 9-12

Major Emphases

A comprehensive Healthful Living Education program for all students has as its foundation learning experiences that help each individual develop proactive health promotion behaviors. While many school systems have additional Health/Physical Education units as a local requirement, this section only addresses the health and physical education portions of the K-12 Healthful Living Education curriculum required for graduation from high school.

The absence of objectives beyond the state required curriculum should not be interpreted as a lessening of commitment to the high school students. These high school years are vital to ensure a strong knowledge base for continued personal fitness and lifetime activity skills. A valuable core of health and physical education electives or locally required courses should continue to reflect a competency-based curriculum in Healthful Living Education. The following educational descriptors are reflective of the goals and objectives found in the 9-12 Healthful Living Education curriculum:

By the end of high school:

Students will be able to assess their own health status and understand the relationship of health to their quality of life, develop an awareness of their own control in the area of stress management, accept responsibility for the prevention of major health risks, demonstrate conflict resolution skills, deal effectively with anger, explain a variety of behavior change strategies, and construct a model health risk behavior self-management plan.

Students will be able to demonstrate skills of personal self-protection, identify risk behaviors, describe the potential effects of substance abuse, identify community support resources for the treatment of substance abuse, interpersonal relations, and nutrition/weight management, know how to access these services, implement helping skills in relationships, assess their own nutritional/weight status, and analyze influences on their eating behaviors.

Students will demonstrate an acceptable level of health-related fitness, demonstrate and defend the benefits of fitness and activity, demonstrate and analyze sound principles of fitness development, demonstrate appropriate developmental gymnastic skills used to encourage flexibility, balance, and strength development, and have the skills needed to implement a personal fitness program.

Students will be able to demonstrate the ability to participate successfully in at least three lifetime sports, have the knowledge and skills to safely participate in a wide variety of cardiovascular fitness activities, demonstrate a variety of folk, square and social dance skills, and display the ability to evaluate activities in terms of social, emotional, and physical benefits.

Guidelines for Instruction Regarding Abstinence until Marriage and Sexually-Transmitted Diseases, Including HIV/AIDS

North Carolina General Statute 115C-81 (e1), ratified July 29, 1995, sets forth numerous requirements for both the State Board of Education and for local boards of education. The following general guidelines have been extracted from this legislation and apply to any instruction regarding abstinence until marriage and sexually-transmitted diseases, including HIV/AIDS.

- present factually accurate biological or pathological information that is related to the human reproductive system
- focus on the benefits of abstinence until marriage and the risks of premarital sexual intercourse
- establish abstinence from sexual intercourse outside of marriage as the expected standard for all school-age children
- offer positive reinforcement for abstinence
- provide opportunities that allow for interaction between the parent or legal guardian and the student
- assure that students are aware of the difference between risk reduction through use of contraceptives and/or condoms and risk elimination through abstinence
- for any instruction concerning contraceptives or prophylactics, provide accurate statistical information on their effectiveness and failure rates for preventing pregnancy and sexually-transmitted diseases, including HIV/AIDS, in actual use among adolescent populations
- inform students of the current legal status of those homosexual acts that are a significant means of transmitting diseases, including HIV/AIDS
- assure that students understand that a mutually faithful, monogamous, heterosexual relationship in the context of marriage is the best lifelong means of avoiding diseases transmitted by sexual contact, including HIV/AIDS
- be aware that the instruction in the use of and/or demonstration of condoms is a part of a comprehensive sex education program. Before a comprehensive sex education program is adopted, the local board of education shall conduct a public hearing and make all instructional materials available for review by parents or legal guardians for at least 30 days before the public hearing and 30 days after the hearing.

Grades 9-12 Objectives

1. **Preparatory**

1.1 Assessing own health status.
1.2 Accepting responsibility for own health.
1.3 Determining individual control over health risks.
1.4 Understanding relationship of health to quality of life.
1.5 Relating health education course content of outcomes of value to oneself.

2. **Stress Management**

2.1 Developing awareness of own control over stress.
2.2 Replacing negative thoughts with positive.
2.3 Associating behaviors with values.
2.4 Coping with losses.
2.5 Responding to others with empathy.

3. **Protecting Self/Others**

3.1 Interpreting the importance of various health risks.
3.2 Analyzing own perceptions of health risks.
3.3 Prioritizing own health risks.
3.4* Understanding that a mutually faithful monogamous heterosexual relationship in the context of marriage is the best lifelong means of avoiding sexually-transmitted diseases.
3.5* Refining skills and strategies for remaining or becoming abstinent from sexual intercourse.
3.6* Understanding causes, consequences, and prevention of major health risk behaviors for own age group.
3.7 Judging behaviors and decisions as to their likelihood of resulting in infant morbidity and mortality.
3.8 Identifying risk behavior to manage.
3.9 Constructing a model health risk behavior self-management plan.

*Each school year, before students may participate in any portion of (i) a program that pertains to or is intended to impart information or promote discussion or understanding in regard to the prevention of sexually-transmitted diseases, including Acquired Immune Deficiency Syndrome (AIDS), or to the avoidance of out-of-wedlock pregnancy, (ii) an abstinence until marriage program, or (iii) a comprehensive sex education program, whether developed by the State or by the local board of education, the parents and legal guardians of those students shall be given an opportunity to review the objectives and materials. Local boards of education shall adopt policies to provide opportunities either for parents and legal guardians to consent or for parents and legal guardians to withhold their consent to the students' participation in any or all of these programs.

4. Relationships

4.1 Being aware of health-related problems stemming from relationships.
4.2 Implementing helping skills in relationships.
4.3 Demonstrating conflict resolution skills.
4.4 Formulating principles for healthful dating relationships.
4.5 Dealing effectively with anger.
4.6 Seeking help for relationship problems.

5. Nutrition/Weight Management

5.1 Identifying typical and special nutritional needs of adolescents and of pregnant women.
5.2 Assessing own nutrition/weight status.
5.3 Analyzing influences on own eating behaviors.
5.4 Assessing nutrient content of own diet.
5.5 Designing own nutrition/weight management plan.
5.6 Identifying community resources for help with nutrition/weight management.

6. Substance Abuse

6.1 Counteracting and seeking help for depression.
6.2 Describing the potential effects on others of substance abuse by individuals.
6.3 Analyzing motives for and consequences of steroid abuse.
6.4 Accessing services for dealing with substance abuse problems.
6.5 Explaining behavior change strategies used in the treatment of substance abuse.

7. Personal Fitness Skills

7.1 Demonstrating and evaluating the values of regular physical activity.
7.2 Demonstrating and assessing health-related fitness testing.
7.3 Developing and demonstrating the values of cardiovascular fitness.
7.4 Developing and demonstrating the values of flexibility.
7.5 Identifying and analyzing the principles of cardiovascular and strength development.
7.6 Explaining and demonstrating safety techniques, practices, and guidelines as related to fitness.
7.7 Designing and creating a personal fitness program.

8. Recreational Dance Skills

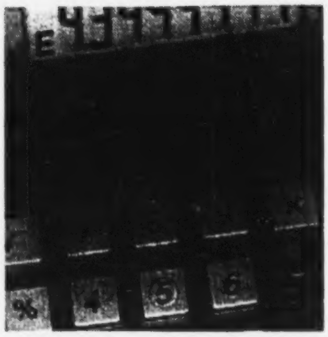
8.1 Knowing and demonstrating folk, square, and social dance skills.
8.2 Evaluating dance skills in terms of non-locomotor, locomotor, combination movements, and effort qualities.

9. Game and Sport Skills

9.1 Demonstrating team sport skills and competence.
9.2 Demonstrating individual and dual sport skills and competence.
9.3 Demonstrating aerobic activity skills and competence.
9.4 Demonstrating outdoor education skills and competence (where facilities and equipment are available).
9.5 Demonstrating swimming skills and competence (where facilities and equipment are available.

10. Developmental Gymnastic Skills

10.1 Demonstrating developmentally appropriate gymnastic skills and competence.
10.2 Creating, performing, and evaluating gymnastic routines.



MATHEMATICS

Standard Course of Study and Grade Level Competencies

K-12

MATHEMATICS

BEST COPY AVAILABLE

Public Schools of North Carolina
Department of Public Instruction

FOREWORD

North Carolina has had a ***Standard Course of Study*** since 1898. Since that time, the curriculum has been revised periodically to reflect the changing needs of students and society. The most recent revision of the state mathematics curriculum occurred in 1989 (K-8) and 1992 (9-12). Those curricula reflected the shift in the knowledge, skills, and attitudes needed by business, industry, and society to function in an information-driven world. The current revisions continue to build upon those efforts. Based upon the work of the North Carolina Mathematics Framework Committees, the ***North Carolina Mathematics Standard Course of Study*** Committees constructed a curriculum focused on giving students the opportunity to:

- acquire the mathematical literacy necessary to function in an information age,
- cultivate the understanding and application of mathematical skills and concepts necessary to thrive in an ever-changing technological world,
- develop the essential elements of problem solving, communication, reasoning, and connections within their study of mathematics, and
- understand the major ideas of mathematics.

The ***North Carolina Mathematics Standard Course of Study*** clearly defines a curriculum supporting the ABC's school reform effort as well as the North Carolina Testing Program. These revisions maintain a forward focus, looking at what students will need to know and be able to do to be successful and contributing citizens in our state and nation in the years ahead.

ACKNOWLEDGMENTS

The Department of Public Instruction gratefully acknowledges the cooperation and assistance received from individuals and groups throughout the State in this current revision process. Without such cooperation, the revisions and printing of the ***North Carolina Standard Course of Study*** would not have been possible.

We wish to express a special thanks to:

- the Office of Instructional Services for providing the leadership and vision that guided the development of this document,
- the many local educators, parents, and business people who participated in the current revision process by serving on curriculum committees and reacting to draft documents,
- faculty from the institutions of higher education who advised the staff and assisted in the revision of the curriculum, and
- the Department of Public Instruction staff who carried the primary responsibility for revising and editing the curriculum.

The current revision process involved on some level the entire mathematics education community, and its end product is a North Carolina curriculum of which North Carolina can be proud. We will regularly revise and improve the curriculum in order to meet the needs of the students of North Carolina.

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PREFACE

Intent

The intent of the *North Carolina Mathematics Standard Course of Study* is to establish competency goals and objectives for the teaching and learning of mathematics in North Carolina. This document is only the first in a series; additional documents will provide more detailed recommendations and support for implementation.

The primary goal of mathematics education in North Carolina is to ensure that all students develop *mathematical power*. "This term denotes an individual's abilities to explore, conjecture, and reason logically, as well as the ability to use a variety of mathematical methods effectively to solve nonroutine problems." (p.5, *Curriculum and Evaluation Standards for School Mathematics*, NCTM)

Revisions

The *North Carolina Mathematics Standard Course of Study* was last revised in 1989 (K-8) and 1992 (9-12). Reforms and revisions in mathematics education programs to foster the development of mathematical power are necessary because:

- The mathematics required for competence in the work place continues to change and increase;
- The population that needs mathematical competence has significantly expanded; and
- Research has greatly advanced our knowledge about the teaching and learning of mathematics.

Changing Vision of Mathematics

Students in North Carolina have demonstrated progress in mathematics learning in recent years. To build on this improvement, it is imperative that broad-based implementation of mathematics reforms continue so that all students in our state can realize their potential.

Because mathematics and particularly the methods and tools for doing mathematics are so different today from a generation ago, the nature of mathematics is changing. Traditional school mathematics is no longer a sufficient preparation for today's students. A revised perception of teaching is required in order for mathematical power to be achieved.

One important change is the rapid expansion of the body of mathematical knowledge; furthermore, mathematical applications have more impact on citizens. For example, the quality of our lives is enhanced by the mathematical modeling that is used to predict storms, manage our natural resources, and handle vast amounts of information.

Some of the complex mathematical procedures that today's adults learned when they were in school, such as computing square roots and doing tedious calculations, are no longer as important as they once were. Because of electronic computing and information storage devices, adults are no longer required to be able to carry out complex paper and pencil computations or maintain extensive records on paper.

Some mathematics is more accessible to today's students due to new knowledge and technology. Software on graphing calculators and computers allows students to investigate aspects of geometry and algebraic functions that are impossible to investigate with paper and pencil alone.

For these reasons students need a strong understanding of our number system, and the ability to estimate and compute mentally. Fundamental to these skills are knowledge of number facts, the basic computational processes and the appropriate use of each operation. Together with an emphasis on using mathematics to solve problems, the mathematics curriculum will provide students with depth of understanding and skill in applying the content.

Technology

Technology has changed both the mathematics that is important for solving real-world problems and the ways that mathematics is used to solve those problems. North Carolina workers who assemble furniture, for instance, are now expected to have problem-solving skills with which they monitor production lines and make decisions which may halt production, whereas in the past, such workers would have been expected only to follow repetitive procedures without making any decisions. Thus, problem solving has become important for all students and needs to be reflected both in content of school mathematics and in the ways that mathematics is taught and assessed.

Relevant Mathematics

A second important change is that the demands of contemporary society in general and the work place in particular increasingly require higher levels of sophistication in mathematical thinking. During the industrial era, good jobs were available for large numbers of relatively low-skilled workers. That day is gone. Mathematical power for all is becoming more and more essential for a healthy economic future. Therefore, all students should continue to study significant mathematics throughout their public school experience, including the development of good number and spatial sense, knowledge of patterns and functions, and the ability to gather, represent, analyze, and interpret data.

Student Learning

A third change is that research on how students learn mathematics has begun to reveal critical details about how students internalize important mathematics concepts. There is compelling evidence that students are far more capable mathematically than we ever imagined. As a result, we can now plan instruction in ways that are for more likely to help them develop mathematical power.

One way is the use of mathematical modeling, a key technique used to build understanding of abstract ideas. Teachers need to expose students to physical representations which help develop understanding of abstract concepts. Early years should include work with manipulatives to help form a sense of number; geometric shapes and patterns facilitate the development of spatial reasoning. In later studies, students will generate algebraic expressions, another form of modeling, which represent physical, social, or natural phenomena and help them make predictions.

One of the challenges facing education today is the development of effectice mechanisms for informing teachers about this research so that they can transform the learning environment in their classrooms. Research shows that students develop mathematical competence and power by engaging in solving meaningful problems. Beginning in the earliest grade levels, students should be challenged to use their own knowledge and experience, working alone, in pairs, and in small and large groups, to solve problematic tasks. They should be expected to communicate their thinking with pictures, numbers and words. Teachers should encourage students to question one another when an explanation doesn't make sense to them. This problem-centered approach to learning mathematics will enable students to take greater responsibility for their own learning, to develop essential communication and decision-making skills, and to understand the fundamental concepts of mathematics, all of which will be critically important to them.

Program Review

These changes require a reevaluation of all aspects of mathematics education. There is an urgent need to reexamine:

- The roles of teachers and students in classrooms;
- The content of school mathematics;
- Assessment practices;
- The preparation and professional development of teachers and
- The level of support for mathematics education from all parts of society.

Mathematics for all North Carolina students

Goals

The vision and philosophy described throughout this document are based on our goals in mathematics education for North Carolina students.

The six goals are for *all* students to develop:

- Strong mathematical problem solving and reasoning abilities;
- A firm grounding in essential mathematical concepts and skills, including computation and estimation;
- Connections within mathematics and with other disciplines;
- The ability to use appropriate tools including technology to solve mathematical problems;
- The ability to communicate their understanding of mathematics effectively; and
- Positive attitudes and beliefs about mathematics.

These goals for our students in mathematics are the foundation for the rest of the document and guide the development of the critical areas in mathematics education.

Critical Aspects of Mathematics Education

Five components have been identified as critical for achieving the goals for our students and as making a significant impact on the quality of mathematics education. A summary of each of these is given here. They are:

- Teaching and Learning
- Content
- Assessment
- Preparation and Professional Development of Teachers
- Roles and Responsibilities

Teaching and Learning

Teachers are the key to changing the learning environment in North Carolina's classrooms. They plan classroom experiences and create a supportive environment for learning to take place. A teacher plays many roles in today's classrooms as the guide, the coach, the facilitator, and the instigator of mathematical explorations. Through their classroom practices, teachers promote students' mathematical reasoning, challenge them with rich problems through which they learn to value mathematics, and provide them with a strong foundation for further study. Most of all, teachers encourage and support their students' development of mathematical power.

The heart of mathematics is reasoning, which together with knowledge of appropriate mathematical content forms the basis of mathematical power. The goal of mathematics education in North Carolina is to enable all students to develop mathematical power and confidence in their ability to do mathematics. A curriculum that focuses on significant mathematical ideas, instead of isolated topics, encompasses both concepts and skills through rich explorations, problems, and applications that enable students to develop a genuine understanding of the big ideas of mathematics.

Assessment

Assessment is a process of planning, gathering evidence, interpreting evidence, and making decisions. Mathematics assessment is directly related to instruction and student thinking. Four purposes of assessment are monitoring student progress, making instructional decisions, evaluating student achievement, and evaluating a program.

Assessment has taken on a broader meaning. Beyond grading students, assessment should probe beneath right answers to discover how students think and how instruction can be improved. In this view of assessment, expected outcomes are set and the time necessary for each student to achieve the intended outcomes varies. Every student is challenged to meet a higher standard.

Effective assessment fosters the development of mathematical power. Students must be given opportunities to acquire and demonstrate understanding and depth of knowledge. The criteria for judging mathematical accomplishment must be made public and communicated clearly to students, parents, and other appropriate parties.

Preparation and Professional Development of Mathematics Teachers

Teaching in a manner that cultivates mathematical power for all students is a complex and demanding process that requires intensive lifelong learning. Teachers must have not only extensive knowledge of mathematics, but also deep understanding of how students learn mathematics. Appropriate content and pedagogical preparation enables teachers to design lessons and implement curriculum using suitable strategies and resources in an environment where all students have an opportunity to succeed. Teachers are role models for their students, as learners and problem solvers who value and enjoy mathematics. Programs for teachers at all stages in their career must provide them with the tools to implement the goals previously stated on page 4.

The professional development of a mathematics teacher is an ongoing process. This development occurs in three distinct phases: preservice (undergraduate or teacher preparation); induction (the first 3 to 5 years of teaching); and in-service (continued professional growth over the span of the teacher's career). Communication and articulation efforts to link these phases are necessary for a continuum of professional growth. Although teachers need to take a major responsibility for their own professional development, it also requires leadership, resources, financial support, and advocacy at the state, district, school, classroom, and university levels.

Roles and Responsibilities

Many different constituencies in North Carolina must work together to establish a mathematics education program that enables all students in the state to develop their full potential as powerful and creative thinkers and problem solvers.

Support for mathematics education requires that:

- Legislators and other financial partners provide funding that increases the likelihood of student achievement;
- School boards and administrators enact policies which enable teachers to provide quality instruction;
- Colleges and universities help teachers develop content knowledge and expertise in teaching;
- Parents and other citizens become partners with schools to value and nurture student efforts; and
- Educators and students work cooperatively to establish and reach high educational goals.

The education of students is our shared responsibility. All citizens of North Carolina must assume this responsibility and become active advocates for improved mathematics education.

Mathematics Curriculum

Organization

The competency goals and objectives of the mathematics curriculum are organized into four strands: Number Sense, Numeration, and Numerical Operations; Spatial Sense, Measurement, and Geometry; Patterns, Relationships, and Functions; Statistics, Probability, and Discrete Mathematics. These strands are not meant to be a sequential guide for instruction but rather an organization of similar objectives under a common topic.

The mathematics program is designed in grade spans which parallel the developmental stages of students: grades K-2, grades 3-5, grades 6-8, and grades 9-12. The elementary program focuses on students actively engaged in the development of mathematical understanding by using manipulatives, working independently and cooperatively to solve problems, and conducting investigations and recording findings. Middle grade students expand their skills to compute with all real numbers and are challenged to apply their prior knowledge and experience in new and more difficult situations. The basic high school mathematics program includes courses from Introductory Mathematics through Advanced Advanced Placement Calculus. Additional elective courses are intended to offer opportunities which address the needs of individual schools.

K - 2, 3 - 5, 6 - 8
Mathematics

High School Courses
•Introductory Mathematics *•Algebra I* *•Algebra II*
•Geometry *•Technical Mathematics 1* *•Technical Mathematics 2*
•Advanced Mathematics *•Advanced Placement Calculus*

Additional Electives
•Integrated Mathematics 1, 2, 3
•Discrete Mathematics
•Advanced Placement Statistics

Revisions

Notable differences for 1998 revisions to the *North Carolina Mathematics Standard Course of Study* include the following:

- Seven strands collapsed into four strands.
- Repetition of concepts and skills across grades eliminated.
- Introduction of an Integrated Mathematics sequence at the secondary level.
- New high school elective courses: Advanced Placement Statistics, Technical Mathematics II, Discrete Mathematics.

K-8
MATHEMATICS COMPETENCY GOALS AND OBJECTIVES

Early Grades K-2

Number Sense, Numeration, and Numerical Operations

During the early years in a curriculum designed to develop number sense, students read, write, and count using whole numbers. They represent whole numbers using concrete, pictorial, and symbolic representations. They recognize different representations for whole numbers and explain why those representations are the same. They compare and order whole numbers and use a variety of strategies to estimate quantities.

The basic understanding of place value forms the foundation for subsequent work with number. Students group objects recognizing that digits have different values depending upon their placement or position in numerals.

Students use many tools and strategies to model solutions for a wide variety of mathematical story problems involving addition, subtraction, multiplication, and division, even though they might not be able to write symbolic representations in all of these situations. They begin to develop meaning for the four basic operations, with particular emphasis on addition and subtraction. Students learn a variety of strategies in developing meaning for basic addition and subtraction facts. They apply different methods of computing such as mental computation and paper-and-pencil algorithms.

Spatial Sense, Measurement, and Geometry

Students learn the names and basic properties of simple geometric shapes, such as circles, squares, rectangles, triangles, spheres, cylinders, and cubes. They learn how shapes can be used to form patterns and tilings. They look for the shapes in nature and in objects people make, and practice drawing and using the shapes. They learn the meaning of basic directional and positional relationships such as near, far, inside, outside, and between.

They begin to understand the concepts of geometry and measurement by using a variety of manipulative materials to learn the difference between the length, width, and height of objects. As they learn about different tools for measuring, they describe, estimate, and measure length, weight, capacity, and temperature using non-standard and standard units. They begin to work with money, recognizing coins and their value. They use a variety of coins to represent different amounts of money. Students use the calendar to measure and model the days of the week and months of the year. They use clocks to explore and tell time to the nearest hour and half hour.

Patterns, Relationships, and Functions

Young children learn about patterns by describing objects by their attributes. They compare, sort, and order things by one or more characteristics. They extend their understanding by finding and creating patterns, by correcting errors in patterns, and by translating patterns into different forms. Students also gather data pertaining to interests, family, and other things around them. They begin to understand that a number is a symbol for how much of something there is and begin to explore the use of a variable or placeholder and open sentences to express relationships. They also begin to use patterns as a problem-solving strategy.

Data, Probability, and Statistics.

Students are introduced to the process of statistical investigation. They identify what data are needed to solve problems, plan and implement strategies for obtaining these data; and collect data by counting, measuring, and conducting simple surveys and experiments. They also analyze data using a variety of formats (e.g., pictures and tallies) and describe data using informal language as well as selected standard terminology such as tally. They recognize relationships between sets of data and begin to observe that changes in quantities may be interdependent.

Students conduct simple probability experiments using the process of statistical investigation. After gathering data, they interpret results in light of the likelihood of outcomes related to the occurrence of simple events. In investigating statistics and probability, students are introduced to counting strategies such as making tallies that reflect their beginning work in discrete mathematics.

Kindergarten

Major Concepts

- Read, write, and count using whole numbers
- Recognize circles, squares, triangles, and rectangles
- Identify and describe patterns
- Collect data and create graphs

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will recognize, model, and write numbers through 10.

1.1 Model numbers in a variety of ways.

1.2 Read, write and count using whole numbers; rote count forward to 30 or beyond and backward from 10.

1.3 Use 1-1 correspondence to identify how many (0 - 10).

1.4 Recognize numerals and match to sets 0 - 10.

1.5 Write numerals 0-9 in meaningful contexts.

1.6 Use ordinals first through fifth.

1.7 Create and identify sets with more, less, or equal members by matching.

1.8 Combine and remove objects from sets, describe results.

1.9 Estimate quantities less than 20.

1.10 Create and solve story problems within a group.

1.11 Share equally (divide) between two people; explain solution.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will explore concepts of geometry and non-standard measurement.

2.1 Recognize basic two-dimensional (plane) figures: circle, square, triangle, and rectangle. Describe their likenesses and differences and identify them in the environment.

2.2 Complete simple spatial visualization tasks and puzzles.

2.3 Compare and order objects using appropriate vocabulary.

2.4 Model and use directional and positional words.

2.5 Use non-standard measurement of length, weight, capacity, and time.

2.6 Name the days of the week.

Patterns, Relationships, and Functions

Goal 3: The learner will model simple patterns and sorting activities.

3.1 Describe likenesses and differences between and among objects.

3.2 Sort by a given attribute; sort by own rule and explain.

3.3 Identify, copy, continue, and describe patterns.

3.4 Create patterns with actions, words and objects.

Data, Probability, and Statistics

Goal 4: The learner will gather and organize data in a group setting.

4.1 Collect data to create concrete and pictorial graphs and describe the results as a group activity.

Grade 1

Major Concepts	Computational Skills to Maintain
• Addition and subtraction • Spheres, cubes, cylinders, and cones • Time • Describe and compare objects • Patterns • Gather, organize, and display data	• Read, write and count using whole numbers

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will read, write, and model numbers through 100 and compute with whole numbers.

1.1 Count using one-to-one correspondence to 30.
1.2 Rote count by 1's, 5's and 10's to 100; by 2's to 20.
1.3 Make sets and match numerals up to 30.
1.4 Compare and order sets and numerals up to 30.
1.5 Read and write numerals to 100.
1.6 Read number words zero to ten.
1.7 Use ordinal numbers first through tenth.
1.8 Group and count objects by 2's, 5's, and 10's.
1.9 Identify one more/less/before/after/between.
1.10 Identify equal and unequal numerals and sets.
1.11 Represent numbers in a variety of ways: using tallies, building models to 100.
1.12 Estimate quantities up to 30. Recognize when solutions to problems are reasonable.
1.13 Group objects into tens and ones, recognize models; record.
1.14 Model concept of addition; know the combinations for sums to 10.
1.15 Model concept of subtraction as take-away, comparison, and missing addends.
1.16 Model the division of sets into two, three or four equal parts; explain solution.
1.17 Relate addition and subtraction to symbolic notation and write equations.
1.18 Find sums and differences using counting strategies such as counting on and counting back.
1.19 Memorize addition and subtraction facts to 10.
1.20 Model 10 more/less to 100.
1.21 Model 2-digit addition/subtraction with multiples of 10 to 100.

1.22 Create and solve problems using addition and subtraction. Use problem-solving strategies: modeling with manipulatives, acting out, drawing, using diagrams; use calculators as appropriate. Explain solutions.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will recognize, describe and identify simple geometric shapes and forms, and exhibit skills in using measurement.

2.1 Recognize, identify, and describe plane geometric figures: circle, square, triangle, rectangle.
2.2 Recognize plane geometric figures: hexagon, trapezoid, and parallelogram.
2.3 Recognize basic three-dimensional (solid) figures: sphere, cube, cylinder and cone.
2.4 Identify open and closed figures.
2.5 Use directional and positional words.
2.6 Describe and compare characteristics of geometric figures.
2.7 Identify equal and unequal measures and regions.
2.8 Divide regions into two, three, and four equal parts.
2.9 Use non-standard units to estimate and measure length, weight, and capacity; record results.
2.10 Use calendar language appropriately, e.g. seasons and months of the year, today, yesterday, tomorrow, next week, last month.
2.11 Tell time to nearest hour using digital and analog clocks.
2.12 Solve problems involving non-standard measurement and explain strategy.
2.13 Solve spatial visualization puzzles and tasks; use visual memory.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of classification, patterning, and seriation.

3.1 Describe and compare objects by their attributes; order sets.
3.2 Sort a set of objects in more than one way; sort by own rules and explain.
3.3 Copy, continue, and record patterns with actions, words and objects; translate into other forms.
3.4 Create and record patterns. Identify and name the pattern unit or numerical sequence.
3.5 Solve problems by identifying and correcting errors in repeating patterns.
3.6 Identify patterns in the environment.

Data, Probability, and Statistics.

Goal 4: The learner will demonstrate an understanding of data collection, display, and interpretation.

4.1 Gather, organize and display information as a group activity.
4.2 Answer questions about charts and graphs.
4.3 Make predictions based on experiences.
4.4 Create concrete, pictorial, and symbolic graphs using prepared grids.

Grade 2

Major Concepts	Computational Skills to Maintain
• Place value • Addition of multi-digit numbers • Length, capacity, and weight • Time and money • Patterns • Organization of data • Simple probability experiments • Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.	• Read, write and count using whole numbers • Count using one-to-one correspondence • Addition and subtraction facts

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will read, write, and model numbers through 1000, and compute with numbers less than 1000.

1.1 Rote count up to 1000.
1.2 Identify and use 10 more and 10 less.
1.3 Compare and order numbers; identify missing numbers in a sequence to 100.
1.4 Read word names for numbers to 100.
1.5 Use counting strategies such as skip counting by 2's, 5's, and 10's and grouping objects by 3's and 4's.
1.6 Identify odd and even numbers using objects.
1.7 Group objects into ones, tens, and hundreds and record in standard form.
1.8 Model 3-digit numbers; identify, read, and write correct numerals.
1.9 Indicate the value of each digit in any 2 or 3-digit number.
1.10 Use problem-solving strategies such as diagrams, organized lists, manipulatives, act out, guess and check, pictures; use calculators when appropriate.
1.11 Explain solutions to problems using words, pictures, and numbers.
1.12 Make reasonable estimates up to 100 objects.
1.13 Identify missing addends for addition facts to 18.
1.14 Add 3 single-digit numbers.
1.15 Model 2-digit addition and subtraction using manipulatives and alternative strategies; record, and explain.
1.16 Memorize addition/subtraction facts up to 18.
1.17 Add 2- and 3- digit numbers with and without regrouping.

1.18 Use addition/subtraction strategies to solve problems.

1.19 Divide regions/sets into halves, thirds, and fourths. Record in fractional form.

1.20 Model repeated addition (multiplication) and sharing equally (division); record solutions.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will recognize, understand, and use basic geometric properties, and standard units of metric and customary measurement.

2.1 Describe and make plane figures: squares, rectangles, triangles, circles, hexagons, trapezoids, and parallelograms.

2.2 Describe and make solid figures: cubes, rectangular prisms, spheres, cylinders, cones, and pyramids.

2.3 Identify and make figures with line symmetry.

2.4 Identify and make congruent figures.

2.5 Use spatial visualization to solve problems; demonstrate visual memory.

2.6 Measure lengths in inches/centimeters; record results.

2.7 Measure capacity to the nearest cup/liter; record results.

2.8 Weigh objects to the nearest pound/kilogram; record results.

2.9 Read Fahrenheit thermometers in increments of 1's, 2's, and 5's; record results.

2.10 Sequence months; use the calendar to solve problems.

2.11 Tell time to the nearest half-hour using digital and analog clocks; record. Solve problems related to time.

2.12 Determine the value of sets of coins (pennies, nickels, dimes, quarters); record using appropriate notation.

2.13 Make different sets of coins with equivalent values.

2.14 Identify coins needed to buy items priced at $1.00 or less.

2.15 Solve problems using money. Estimate costs and make change using coins up to $1.00.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of classification, patterning, and seriation.

3.1 Sort by one or more attributes; describe rules used.
3.2 Identify classification and patterning in the environment.
3.3 Define, continue, and describe rules for geometric patterns.
3.4 Use patterns to continue numerical sequences; identify the rule.
3.5 Identify and correct errors in numerical and geometric patterns.
3.6 Solve simple logic problems.
3.7 Define and continue pattern units; translate into other forms.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding of data collection, display, and interpretation.

4.1 Collect, sort, organize, and display information in charts, graphs, and tables with correct labeling.
4.2 Summarize and interpret information in charts, graphs, and tables; make predictions.
4.3 Collect and display data over a period of time.
4.4 Locate points on the number line and positions on a grid.
4.5 Complete simple probability experiments; describe results and make predictions.

Intermediate Grades 3-5

Number Sense, Numeration, and Numerical Operations

Youngsters in grades 3-5 represent whole numbers, fractions, and decimals with concrete objects, pictures, and symbols in a variety of contexts. They recognize equivalent fractions and decimals and explain the basis for the equivalence. They compare and order fractions and decimals. They understand and use the place value system and various properties of numbers, including the properties of special numbers like 0 and 1; round numbers to a specified precision; and reasonably estimate answers to computations.

Students use a variety of tools to model operations with whole numbers, develop methods for recording operations, and relate models to standard symbolic expressions and algorithms. They further develop and apply different methods of computing, such as mental computation, paper-and-pencil algorithms, and technology. They learn the fundamental order of operations and explore various properties of operations.

Students use a variety of strategies for learning basic multiplication and division facts. They explain why such strategies work by modeling using counters or other tools. Overall, students have a firm foundation in the understanding of place value, quickly recall basic addition, subtraction, multiplication, and division facts, and easily carry out operations with whole numbers.

Spatial Sense, Measurement, and Geometry

Children in grades 3-5 measure distance, area, and capacity in both customary and metric units. They tell and write time using digital and analog clocks. Using clocks and calendars they explore elapsed time problems. They explore concepts of perimeter and area of rectangles and squares and develop the basic formulas for computing these quantities. They approximate or measure the areas of irregular figures by covering them with simpler figures such as squares or triangles. They estimate distances and draw and build plane and solid figures. They learn about angle measurement, basic properties of circles, and classification of polygons and polyhedra. They investigate the basic geometric relationships, such as parallel, perpendicular, congruent, and similar. They recognize symmetry and geometric transformations. They plot points on a rectangular grid and read graphs drawn on rectangular grids.

Patterns, Relationships, and Functions

In grades 3-5, students continue to identify and describe patterns in many situations, including patterns in real-world data. They use multiple tools such as concrete materials, calculators, and computers to investigate and discover patterns. Patterns are used in geometry and other mathematics to develop new concepts. Students make tables and graphs to show relationships and then verbally describe the patterns. They use patterns to extend their data, generate a rule from the relationship, and make predictions. They begin to understand that symbols can be used to stand for unknown quantities and that these symbols can be used in expressions, in open sentences, and in describing relationships. They begin to develop original expressions verbally and algebraically.

Data, Probability, and Statistics.

Students continue working with the process of statistical investigation. Techniques for data collection become more sophisticated, for example, informal consideration of sample size and collection of data over time. The nature and kinds of representations used include tables and graphs such as bar, circle and pictograph. In addition, students use coordinate graphs to explore relationships among pairs of data. Students describe data using standard measures such as median, mode, and range and are introduced to the concept of mean.

Applying the process of statistical investigation, students conduct probability experiments, recording the ways in which the conditions of simple experiments affect the outcomes. The language of simple fractions is used to compare probabilities. In investigating statistics and probability, students extend their work with counting strategies, exploring the multiplicative nature of working with simple combinations.

Grade 3

Major Concepts

- Multiplication facts/tables
- Subtraction of multi-digit numbers
- Length, capacity, and weight
- Time and temperature
- Polygons and polyhedra
- Patterns
- Read and interpret graphs
- Permutations and combinations
- Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.

Computational Skills to Maintain

- Count using one-to-one correspondence
- Addition and subtraction facts
- Use counting strategies
- Add multi-digit numbers

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will model, identify and compute with numbers less than 10,000.

1.1 Read and write word names for numbers to 1,000.

1.2 Relate standard and expanded notation to 3- and 4-digit numbers.

1.3 Compare and order numbers less than 10,000.

1.4 Use estimation techniques in determining solutions to problems.

1.5 Identify odd and even numbers; generalize ways to determine odd or even.

1.6 Model fractions and mixed numbers using regions and sets; describe relationships of parts to whole; record.

1.7 Compare and order fractions using models; describe comparisons.

1.8 Model equivalent fractions using manipulatives and pictures.

1.9 Subtract 2- and 3-digit numbers.

1.10 Model and explain multiplication in a variety of ways including repeated addition, rectangular arrays, and skip counting.

1.11 Model and use the identity and commutative properties for addition and multiplication.

1.12 Model and explain division in a variety of ways including sharing equally, repeated subtraction, rectangular arrays, and its relationship to multiplication.

1.13 Memorize multiplication facts/tables through 10.

1.14 Determine if there is sufficient information to solve a problem; identify missing or extraneous data in problem-solving situations.

1.15 Solve meaningful, multi-step problems involving addition, subtraction and multiplication using a variety of strategies; use calculators as appropriate

Spatial Sense, Measurement , and Geometry

Goal 2: The learner will recognize, understand, and use basic geometric properties, and standard units of metric and customary measurement.

2.1 Draw and classify polygons and polyhedra (solid figures) using appropriate vocabulary: faces, angles, edges, and vertices. Describe the rules for grouping.

2.2 Identify and model symmetry and congruence with concrete materials and drawings.

2.3 Construct with cubes a solid to match a given picture or model.

2.4 Recognize a three-dimensional object from different perspectives.

2.5 Observe and describe geometry in the environment.

2.6 Estimate and measure length (inches, feet, yards, centimeters, meters), weight (grams, ounces, pounds), and capacity (cups, pints, quarts, gallons, liters) using appropriate tools and units.

2.7 Model and compare units within the same measurement system.

2.8 Model the concepts of area and perimeter using concrete materials, non-standard, and standard units. Estimate, record, and explain results.

2.9 Determine the value of sets of coins to $5.00 and create equivalent amounts with different coins.

2.10 Estimate and compute the cost of items up to $5.00; make change up to $5.00.

2.11 Tell time to the nearest minute with digital and analog clocks; record. Solve problems related to time.

2.12 Read Celsius and Fahrenheit thermometers; relate temperatures to everyday situations.

2.13 Solve problems using measurement concepts and procedures. Explain the solutions

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of classification, patterning, and seriation.

3.1 Organize objects or ideas into groups; describe attributes of groups and rules for sorting.

3.2 Describe and demonstrate patterns in skip counting and multiplication; continue sequences beyond memorized or modeled numbers.

3.3 Extend and create geometric and numeric sequences; describe patterns in a variety of ways; use calculators and computers where appropriate.

3.4 Analyze patterns; describe properties and translate into different forms. Create and record similar patterns.

3.5 Use patterns to make predictions and solve problems.

3.6 Use Venn diagrams as a problem-solving strategy to illustrate similarities and differences in sets.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding of data collection, display, and interpretation.

4.1 Gather and organize data from surveys and classroom experiments, including data collected over a period of time.

4.2 Display data on charts and graphs: picture, bar and line plots; describe data using mode.

4.3 Construct graphs where symbols or scales represent multiple units.

4.4 Read and interpret graphs and charts (bar, picture, circle, line and line plots) as sources of information; identify main idea, draw conclusions and make predictions.

4.5 Name the ordered pair for a point on the grid; plot positions named by ordered pairs on a coordinate grid.

4.6 Construct and use time lines to display sequences of events.

4.7 Describe the probability of chance events as more, less or equally likely to occur.

4.8 List arrangements (permutations) and combinations of up to three items.

Grade 4

Major Concepts

- Addition, subtraction, and multiplication with multi-digit numbers
- Division with single digit divisors
- Points, lines, angles, and transformations in geometry
- Non-numeric symbols to represent quantities
- Range, median, and mode
- Bar, picture, and circle graphs; stem-and-leaf plots and line plots
- Probability
- Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.

Computational Skills to Maintain

- Use counting strategies
- Add and subtract multi-digit numbers
- Read and write word names for numbers
- Addition, subtraction, multiplication facts/ tables
- Identify, explain, and apply the commutative and identity properties for multiplication and addition

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will read, write, model, and compute with rational numbers.

1.1 Read and write numbers less than one million using standard and expanded notation.

1.2 Use estimation techniques in determining solutions to problems.

1.3 Model and identify the place value of each digit in a multi-digit numeral to the hundredths place.

1.4 Model, identify, and compare rational numbers (fractions and mixed numbers).

1.5 Identify and compare rational numbers in decimal form (tenths and hundredths) using models and pictures.

1.6 Relate decimals and fractions (tenths and hundredths) to each other using models and pictures.

1.7 Use models and pictures to add and subtract decimals, explaining the processes and recording results.

1.8 Use models and pictures to add and subtract rational numbers with like denominators.

1.9 Find the fractional part of a whole number using models and pictures.

1.10 Model and explain associative and distributive properties.

1.11 Memorize the division facts related to the multiplication facts/tables through 10.

1.12 Identify missing factors in multiplication facts.

1.13 Round rational numbers to the nearest whole number and justify.

1.14 Estimate solutions to problems.

1.15 Multiply 2- or 3- digit numbers by 1-digit numbers or a 2-digit multiple of 10.

1.16 Divide using single-digit divisors, with and without remainders.

1.17 Use order of operations with addition, subtraction, multiplication, and division.

1.18 Solve multi-step problems; determine if there is sufficient data given, then select additional strategies including:

- make a chart or graph
- look for patterns
- make a simpler problem
- use logic
- work backwards
- break into parts.

Verify and interpret results with respect to the original problem; use calculators as appropriate. Discuss alternate methods for solution.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will demonstrate an understanding and use of the properties and relationships in geometry, and standard units of metric and customary measurement.

2.1 Identify points, lines, and angles (acute, right, and obtuse); identify in the environment.

2.2 Use manipulatives, pictorial representations, and appropriate vocabulary (e.g. sides, angles, and vertices) to identify properties of plane figures; identify in the environment.

2.3 Use manipulatives, pictorial representations, and appropriate vocabulary (e.g. faces, edges, and vertices) to identify properties of polyhedra (solid figures); identify in the environment.

2.4 Identify intersecting, parallel, and perpendicular lines and line segments and their midpoints; identify in the environment.

2.5 Recognize congruent plane figures after geometric transformations such as rotations (turns), reflections (flips), and translations (slides).

2.6 Use designs, models, and computer graphics to illustrate reflections, rotations, and translations of plane figures and record observations.

2.7 Estimate and measure length, capacity and mass using these additional units: inches, miles, centimeters, and kilometers; milliliters, cups, and pints; kilograms and tons.

2.8 Write and solve meaningful, multi-step problems involving money, elapsed time, and temperature; verify reasonableness of answers.

2.9 Use models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure.

2.10 Measure the perimeter of rectangles and triangles. Determine the area of rectangles and squares using grids; find areas of other regular and irregular figures using grids.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of patterns and relationships.

3.1 Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

3.2 Identify the pattern by stating the rule, extend the pattern, generalize the rule for the pattern, and make predictions when given a table of number pairs or a set of data.

3.3 Construct and order a table of values to solve problems associated with a given relationship.

3.4 Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding and use of graphing, probability, and data analysis.

4.1 Interpret and construct stem-and-leaf plots.

4.2 Display data in a variety of ways including circle graphs. Discuss the advantages and disadvantages of each form including ease of creation and purpose of the graph.

4.3 Collect, organize, and display data from surveys, research, and classroom experiments, including data collected over time. Include data from other disciplines such as science, physical education, social studies, and the media.

4.4 Interpret information orally and in writing from charts, tables, tallies, and graphs.

4.5 Use range, median, and mode to describe a set of data.

4.6 Plot points that represent ordered pairs of data from many different sources such as economics, science experiments, and recreational activities.

4.7 Investigate and discuss probabilities by experimenting with devices that generate random outcomes such as coins, number cubes, spinners.

4.8 Use a fraction to describe the probability of an event and report the outcome of an experiment.

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Grade 5

Major Concepts

- Division with multi-digit divisors
- Addition, subtraction, and multiplication of fractions
- Add, subtract, compare, and order decimals
- Area and perimeter
- Circles
- Draw and measure angles
- Algebraic expressions
- Central tendency-mean
- Line graphs
- Experimental and theoretical probabilities
- Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.

Computational Skills to Maintain

- Read and write word names for numbers
- Multiplication facts/tables
- Division facts
- Add and subtract multi-digit numbers
- Estimate products; multiply multi-digit numbers
- Divide using single digit divisors
- Use order of operations
- Identify, explain, and apply the commutative, associative, distributive and identity properties

Number Sense, Numeration, and Numerical Operations

Goal: The learner will understand and compute with rational numbers.

1.1 Use place value through millions in real-world situations including reading, writing, estimating, and comparing numbers in a variety of forms.

1.2 Estimate products; multiply any whole number by a 2- or 3-digit factor.

1.3 Relate exponential notation to repeated multiplication.

1.4 Estimate and solve division problems with 2- and 3- digit divisors; explain solution.

1.5 Use the order of operations to simplify numerical expressions.

1.6 Find multiples, common multiples, and least common multiple of numbers; explain.

1.7 Find the factors, common factors, and greatest common factor of numbers; explain.

1.8 Identify prime and composite numbers less than 100.

1.9 Identify equivalent decimals and fractions at the symbolic level. Explain the equivalence.

1.10 Compare and order numbers with decimals to the thousandths place; explain solution.

1.11 Compare and order fractions which are given with the same numerators or the same denominators; explain solution.

1.12 Add and subtract fractions with like denominators.

1.13 Multiply a fraction by a whole number.

1.14 Use models and pictures to add and subtract fractions and mixed numbers with unlike denominators; record solutions.

1.15 Estimate results and compute sums and differences with decimal numbers.

1.16 Use models and pictures to multiply a whole number by a decimal number; record and explain.

1.17 Determine if there is sufficient information to solve a problem; identify missing or extraneous data in problem-solving situations.

1.18 Solve multi-step problems using an organized approach, and selecting additional strategies including

- restate the problem
- classify
- lists
- write a number sentence

Verify and interpret results with respect to the original problem; use calculators as appropriate.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will demonstrate an understanding and use of the properties and relationships in geometry, and standard units of metric and customary measurement.

2.1 Use and make models to demonstrate formulas for the area and perimeter of squares and rectangles, to compare units of area within the same system, and to investigate and compare units of volume.

2.2 Calculate the area and perimeter of rectangles and the perimeters of plane figures.

2.3 Use concrete and pictorial representations and appropriate vocabulary to compare and classify polygons and polyhedra; create models of polyhedra (cubes, cylinders, cones prisms, and pyramids.)

2.4 Use a compass to draw circles; identify and determine the relationships among the radius, diameter, chord, center, and circumference.

2.5 Use a protractor to draw and measure acute, right, and obtuse angles; identify and label the vertex, rays, interior and exterior of an angle.

2.6 Use a variety of quadrilaterals and triangles to draw conclusions about the sum of the measures of the interior angles; use appropriate technology.

2.7 Model proportions by reducing or enlarging drawings using grids.

2.8 Investigate similar figures using rulers and protractors.

2.9 Use an organized approach, appropriate strategies, and technology as needed to solve multistep problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)

2.10 Verify and interpret results with respect to the original problem; identify alternate strategies for solving a problem. Use calculators and computers as appropriate.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of patterns, relationships, and elementary algebraic representation.

3.1 Investigate patterns that occur when changing numerators or denominators of fractions. Model with concrete materials and extend to calculator investigations.

3.2 Identify and use the rules for divisibility.

3.3 Use patterns, relationships, and functions occurring in computation, geometry, graphs, and other applications to make generalizations and predict results.

3.4 Use models to represent variables, expressions, and relationships.

3.5 Use an organized approach and appropriate strategies including calculators to solve multi-step problems involving patterns, relationships, and functions.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding and use of graphing, probability and data analysis.

4.1 Interpret and construct line graphs.

4.2 Explain the kinds of decisions that need to be made in selecting and constructing appropriate graphs including pictograph, bar, line plot, circle, and line graph.

4.3 Systematically collect, organize, display and interpret data both orally and in writing using information from a variety of content areas.

4.4 Compare increasingly complex displays of data, including multiple sets of data on the same graph, computer applications, and Venn diagrams

4.5 Determine the mean of a given set of data using a calculator when appropriate.

4.6 Use the range, median, mean and mode to describe a set of data.

4.7 Show all arrangements (permutations) and combinations of up to four items; list and explain all possible outcomes in a given situation.

4.8 Compare experimental and theoretical (expected) results for a variety of simple experiments.

4.9 Use an organized approach and appropriate strategies to solve multi-step problems involving graphing, probability, and statistics. Use calculators and computers as appropriate.

Middle Grades 6-8

Number Sense, Numeration, and Numerical Operations

Students in the middle years represent integers, rational numbers, and irrational numbers using concrete objects, pictures, and symbols in a variety of contexts. They explore relationships among rational numbers and recognize equivalence for fractions, decimals, and percents and explain the basis for the equivalence. They extend understanding of place value to decimal and scientific notation. They recognize properties of integers, rational, and some real numbers, including 0,1, and inverses. They express numerical comparisons as ratios and rates and solve problems using ratio, proportion, and percent.

Students understand number theory relationships including prime and composite numbers, factors, and multiples. They explain the meaning of powers and square roots of numbers, develop facility with estimation and mental computation involving square numbers, use calculators to compute powers and roots, and can apply the laws of exponents in problem situations.

Spatial Sense, Measurement, and Geometry

Students expand their study of perimeter and area of parallelograms, triangles, and circles and develop the basic formulas for computing these quantities. They extend this study to an exploration of surface area and volume of prisms, cylinders and cones. Students use computers, calculators, and other tools to draw and construct figures and investigate their properties. They use and make a variety of geometric models in solving problems, becoming proficient in interpreting problem situations geometrically. They explore the concept of slope and relate it to linear variation and rates of change in applications. They plot lines and curves in rectangular coordinates, using pencil and paper, graphing calculators, and computer software.

They study congruent and similar triangles and use the Pythagorean Theorem. They continue to study symmetries and transformations and become proficient at visualizing and recognizing figures which have been changed by slides, rotations and/or reflections. Students measure to specified levels of precision and assess errors in measurement. They study the relationships among length, perimeter, area, and volume.

Students draw or construct figures and investigate their properties using computer software as well as standard drafting tools. They also draw three-dimensional figures from different perspectives. They use ratio and proportion in the study of similar figures. They calculate distances and areas from scale drawings and maps and study measurement systems.

Patterns, Relationships, and Functions

Students identify patterns and relationships in context, symbolize them, and express them algebraically. They use concrete materials to develop concepts of operations with variables. They use variables to show interdependence of quantities and to explore questions of what happens to one quantity or variable as the other quantity or variable changes. Formulas provide a context for students to examine and investigate this interdependence. Students gather ordered pairs of linear data, describe the linear relationship between the variables, and represent the relationship in symbols. Students begin to use the language of functions. From tables and graphs students recognize nonlinear relationships and functions. Students increase their understanding of variable through the use of technologies such as graphing calculators and spreadsheets. They write equations for relationships and then graph the equations using a graphing calculator to analyze a situation or make predictions. They solve linear equations and inequalities using multiple strategies including use of concrete materials, tables, guess-and-test, working backwards, and algebraic methods. Students simplify algebraic expressions involving numbers and variables and apply algebraic methods to solve a variety of real-world and mathematical problems.

Data, Probability, and Statistics.

Students investigate more complex data sets using technologies such as spreadsheets, data bases, and graphing calculators. They use more complex representations, such as histograms, box plots, and scatter plots, which highlight an increased understanding of spread and grouping of data and the relationships between variables. They identify basic patterns and trends in tables and charts and use these patterns and trends to make predictions. They describe the distribution of data using measures of central tendency such as mean and measures of spread such as range. Students informally consider topics such as extremes in the data, representativeness, and misuse of representations to communicate information. With bivariate data, they learn to recognize relationships, estimate, and make predictions. They learn that the analysis of a well-chosen representative sample can yield useful information about an entire population, and they begin to choose samples that are sufficiently large and free from bias.

Continuing to use the process of statistical investigation, students conduct experiments and simulations to investigate basic properties of probability, including dependent and independent events. They use a variety of representations, including bar graphs, histograms, and line graphs to display their results. They compare their experimental probabilities with probabilities they have derived theoretically and learn that the level of agreement between the two should depend on the number of times an experiment is repeated. They learn to make inferences and predictions based on the outcomes of their experiments and simulations.

Grade 6

Major Concepts	Computational Skills to Maintain
• Computation with fractions, mixed numbers, and decimals • Compare and order fractions, decimals, percents and integers • Area formulas for triangles, parallelograms, and circles • Relations and functions • Analyze data • Coordinate graphing • Probability of simple events • Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.	• Multiplication and division facts • Estimate results and apply all operations with whole numbers • Use order of operations • Find the factors, common factors, and greatest common factor of numbers • Compute with fractions • Add and subtract with decimal numbers • Identify, explain, and apply the commutative, associative, distributive and identity properties

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will understand and compute with rational numbers.

1.1 Read, write and make models of numbers including percents and exponentials.
1.2 Relate fractions, decimals, and percents.
1.3 Compare and order fractions, decimals, and percents.
1.4 Multiply and divide fractions, mixed numbers, and decimals using models and pictures; record solution.
1.5 Multiply and divide fractions, mixed numbers, and decimals.
1.6 Add and subtract fractions and mixed numbers with unlike denominators.
1.7 Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.
1.8 Solve problems using prime factorization, common factors and common multiples. Explain solutions.
1.9 Use models and pictures to relate concepts of ratio, proportion, and percent; record results.
1.10 Use models and pictures to demonstrate understanding of integers. Record results.
1.11 Compare and order integers.
1.12 Use the order of operations to simplify numerical expressions with parentheses and exponents.
1.13 Translate word problems into number sentences and solve. Explain solutions.

1.14 Analyze problem situations, determine if there is sufficient information to solve the problem, identify missing or extraneous data, select appropriate strategies, and use an organized approach to solve multi-step problems; use calculators when appropriate.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will demonstrate an understanding and use of the properties and relationships in geometry, and standard units of metric and customary measurement.

2.1 Construct congruent segments, congruent angles, bisectors of line segments and bisectors of angles.

2.2 Define and identify interior, exterior, complementary, and supplementary angles and pairs of lines including skew lines.

2.3 Define and identify alternate interior, alternate exterior, corresponding and vertical angles.

2.4 Identify and distinguish among similar, congruent and symmetric figures; name corresponding parts.

2.5 Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

2.6 Investigate and determine the relationship between the diameter and circumference of a circle and the value of pi; calculate the circumference of a circle.

2.7 Identify the relationship between areas of triangles and rectangles with the same base and height.

2.8 Use models to develop formulas for finding areas of triangles, parallelograms and circles.

2.9 Calculate areas of triangles, parallelograms and circles.

2.10 Model the concept of volume for rectangular solids as the product of the area of the base and the height.

2.11 Convert measures of length, area, capacity, weight and time expressed in a given unit to other units in the same measurement system.

2.12 Estimate solutions to problems involving geometry and measurement. Determine when estimates are sufficient for the measurement situation.

2.13 Analyze problem situations, select appropriate strategies, and use an organized approach to solve non-routine and increasingly complex problems involving geometry and measurement. Use technology as appropriate.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of patterns, relationships, and algebraic representations.

3.1 Describe, extend and write rules for a variety of patterns.
3.2 Generate a set of ordered pairs using a given rule which is stated verbally or algebraically.
3.3 Given a group of ordered pairs, identify either verbally or algebraically the rule used to generate them and record results.
3.4 Use variables to describe numerical expressions and relationships.
3.5 Use graphs and tables to represent ordered pairs; describe the relationship; recognize both linear and nonlinear relationships.
3.6 Identify and use patterning as a strategy to solve problems.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding and use of graphing, probability, and data analysis.

4.1 Create and evaluate graphic representations of data.
4.2 Analyze data using spreadsheets.
4.3 Locate points in all quadrants of the coordinate plane using ordered pairs.
4.4 Use measures of central tendency to compare two sets of data.
4.5 Construct convincing arguments based on analysis of data and interpretation of graphs.
4.6 Design an experiment to test a theoretical probability; record and explain results.
4.7 Make predictions based on the probabilities of simple events.
4.8 Use inductive and deductive reasoning to solve problems.
4.9 Analyze problem situations, use an organized approach, and select appropriate strategies and technology to solve problems involving probability and statistics.

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Grade 7

Major Concepts	Computational Skills to Maintain
• Compute with integers • Ratio, proportion, and percent • Compare and order rational numbers • Geometric transformations in the coordinate plane • Proportional relationships and similar figures • Volume • Simple linear equations and inequalities • Histograms • Probability of independent events • Analyze graphic representations of data • Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.	• Estimate products; multiply with multi-digit factors • Estimate quotients; divide with 2- and 3- digit divisors • Use order of operations • Find the factors, common factors, and greatest common factor of numbers • Compute with whole numbers, decimals, and fractions • Identify, explain, and apply the commutative, associative, distributive and identity properties

Number Sense, Numeration and Numerical Operations

Goal 1: The learner will understand and compute with real numbers.

1.1 Write whole numbers in scientific notation; convert scientific notation to standard form; investigate the uses of scientific notation.

1.2 Compare and order rational numbers.

1.3 Model addition, subtraction, multiplication, and division of integers; record.

1.4 Compute with integers.

1.5 Write and solve proportions.

1.6 Estimate and solve problems using ratio, proportion and percent including discounts, taxes, commissions, and simple interest.

1.7 Use geometric models to develop the meaning of the square of a number and its positive square root; investigate and estimate square root, checking the results with a calculator.

1.8 Analyze and select appropriate operations, models, strategies and methods to solve a variety of multi- step problems using positive rational numbers, integers, and their inverses. Use calculators and computers where appropriate.

Spatial Sense, Measurement and Geometry

Goal 2: The learner will demonstrate an understanding and use of the properties and relationships in geometry, and standard units of metric and customary measurement.

2.1 Construct perpendicular and parallel lines.

2.2 Identify the congruent and supplementary relationships of the angles formed by cutting parallel lines by a transversal.

2.3 Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in all quadrants of the coordinate plane.

2.4 Use models to investigate the concept of the Pythagorean Theorem.

2.5 Build models of three-dimensional figures given end, side and top views.

2.6 Draw end, side and top views of three-dimensional figures given models; use appropriate technology.

2.7 Use models to find the surface area of rectangular solids and cylinders.

2.8 Use models to find the volume of prisms and cylinders.

2.9 Calculate the volume of rectangular solids.

2.10 Recognize the effect on the area and perimeter when one or two dimensions of a plane figure are changed.

2.11 Use proportions to express relationships between corresponding parts of similar figures.

Patterns, Relationships and Functions

Goal 3: The learner will demonstrate an understanding of patterns, relationships, and fundamental algebraic concepts.

3.1 Evaluate algebraic expressions.
3.2 Model and solve simple equations and inequalities and graph their solutions; use appropriate technology.
3.3 Write or model a simple linear equation or inequality to solve a given problem; use appropriate technology.
3.4 Write a problem given a simple linear equation or inequality.
3.5 Describe, extend, analyze and create a wide variety of patterns to investigate relationships and solve problems; use appropriate technology.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding and use of graphing, probability, and data analysis.

4.1 Interpret and construct histograms.
4.2 Compare and relate bar graphs and histograms.
4.3 Construct circle graphs using ratios, proportions, and percents.
4.4 Create, compare, contrast, and evaluate both orally and in writing, different graphic representations of the same data.
4.5 Identify appropriate uses of different measures of central tendency.
4.6 Recognize and identify misuses of statistical and numerical data.
4.7 Find all possible outcomes of simple experiments using such methods as lists, tree diagrams, frequency distribution tables, and the Fundamental Counting Principle.
4.8 Compute and apply simple permutations and combinations.
4.9 Find the probability of independent events.
4.10 Identify/explain the relationship between experimental results and theoretical probability.

Grade 8

Major Concepts	Computational Skills to Maintain
• Computation with rational numbers • Conversions among fractions, decimals, and percents • Pythagorean Theorem • Surface area and volume • Linear equations and inequalities • Box plots and scatter plots • Probability of independent and dependent events • Theoretical probabilities and experimental results • Students will create and solve relevant and authentic problems using appropriate technology and applying these concepts as well as those developed in previous years.	• Compute with whole numbers, decimals, and fractions • Use order of operations • Compute with integers • Identify, explain, and apply the commutative, associative, distributive, inverse, and identity properties

Number Sense, Numeration, and Numerical Operations

Goal 1: The learner will understand and compute with real numbers.

1.1 Identify subsets of the real number system.

1.2 Estimate and compute with rational numbers.

1.3 Compare, order, and convert among fractions, decimals (terminating and non-terminating), and percents.

1.4 Solve problems involving percent of increase and percent of decrease.

1.5 Use scientific notation to express large numbers and numbers less than one. Write in standard form numbers given in scientific notation.

1.6 Use rules of exponents.

1.7 Estimate the square root of a number between two consecutive integers; using a calculator, find the square root of a number to the nearest tenth.

1.8 Solve problems involving exponents and scientific notation.

1.9 Determine the absolute value of a number.

1.10 Identify, explain, and apply the commutative, associative, and distributive properties, inverses, and identities in algebraic expressions.

1.11 Simplify algebraic expressions.

1.12 Analyze problems to determine if there is sufficient or extraneous data, select appropriate strategies, and use an organized approach to solve using calculators when appropriate.

Spatial Sense, Measurement, and Geometry

Goal 2: The learner will demonstrate an understanding and use of the properties and relationships in geometry, and standard units of metric and customary measurement.

2.1 Use geometric concepts and modeling to interpret and solve problems.

2.2 Calculate distances and areas from scale drawings and maps.

2.3 Find the surface area of rectangular solids and cylinders.

2.4 Use models to investigate the relationship of the volume of a cone to a cylinder and a pyramid to a prism with the same base and height.

2.5 Find the volume of prisms, cylinders, pyramids, and cones, with and without models.

2.6 Use the Pythagorean Theorem to solve problems.

2.7 Determine the effect on the volume of solid figures when one or more dimension is changed.

2.8 Solve problems related to similar and congruent figures.

2.9 Locate, give the coordinates of, and graph plane figures which are the results of rotations (multiples of 90°). Graph plane figures which are similar to a given figure (dilations.)

2.10 Identify and draw 3-dimensional figures from different perspectives (top, side, front, corner); use appropriate technology.

2.11 Build 3-dimensional figures given various views.

2.12 Select appropriate units and tools for measurement tasks within problem-solving situations; determine precision and check for reasonableness of results.

Patterns, Relationships, and Functions

Goal 3: The learner will demonstrate an understanding of patterns, relationships, and fundamental algebraic concepts.

3.1 Use formulas in problem-solving situations.
3.2 Solve one and two-step linear equations and inequalities.
3.3 Graph a linear equation using ordered pairs. Investigate the graphs of linear inequalities; use appropriate technology.
3.4 Investigate the concept of slope; use appropriate technology.
3.5 Describe, extend, and analyze a wide variety of geometric and numerical patterns, such as Pascal's triangle or the Fibonacci sequence; use appropriate technology.

Data, Probability, and Statistics

Goal 4: The learner will demonstrate an understanding and use of graphing, probability, and data analysis.

4.1 Interpret and construct box plots.
4.2 Collect data involving two variables and display on a scatter plot; interpret results; identify positive and negative relationships.
4.3 Interpret the mean, explain its sensitivity to extremes, and explain its use in comparison with the median and the mode.
4.4 Evaluate arguments based on data. Discuss random vs. biased sampling.
4.5 Find the probability of independent and dependent events.
4.6 Make predictions based on theoretical probabilities and experimental results.

HIGH SCHOOL MATHEMATICS COURSES

High School Grades 9-12

Number Sense, Numeration, and Numerical Operations

Students in the secondary years extend understanding of numbers to include real and complex numbers, with attention given to coordinate and vector representations. They develop understanding of more complex representations of numbers, including exponential and logarithmic expressions. They compare and order real numbers, compare rational approximations to exact values, and extend the relationships of primes, factors, multiples, and divisibility to algebraic settings. They express number relationships using positive and negative rational exponents, logarithms, and radicals, and begin to investigate matrices and other advanced applications of numbers.

Spatial Sense, Measurement, and Geometry

Students use appropriate tools, technologies, and constructions to create figures and identify characteristics and properties which describe relationships among shapes. Students use geometric relationships to solve real-world problems such as creating scale drawings and maps. Students also investigate generalizations which include the classic Euclidean properties of triangles and other figures. A variety of proof strategies are used to verify generalizations and properties of shape and connect geometry to other strands of mathematics.

Students further develop the usefulness of measurement from prior years, especially through science and technical course work, while enhancing their facility with the metric system. They focus on solving measurement-related problems involving concepts of precision, tolerance, error, and multiple dimensions.

Students explore intersections of planes and solid figures and examine geometric definitions of conic sections and other standard geometric functions. Students learn basic trigonometric functions for angles and apply trigonometric methods to solve problems involving triangles.

Patterns, Relationships, and Functions

Students continue to use patterns, tables, and graphs to interpret expressions, equations, and inequalities. They use symbols to represent variables, parameters, and functions and extend their use of symbols to include vectors and matrices. Students use technology to assist in developing models and analytical solutions. They use appropriate terminology and notation to define function, domain, range, composition, and inverses of functions. They expand their understanding of functions to include power, quadratic, exponential, periodic, piece-wise, and recursively defined functions. They gather linear and nonlinear data and fit functions to these data using paper-and-pencil methods, graphing calculators, or computers. They interpret the results both in terms of the symbols used and the overall characteristics of the model. They build an understanding of slope as a rate of change. They solve linear and nonlinear equations, inequalities, and systems using algebraic methods as well as intuitive methods, numerical representations, and graphical methods. They simplify algebraic expressions using appropriate methods, including calculators and computers. Students use data, functions, matrices, and other appropriate mathematics to describe, understand, and make predictions about real-world problems.

Data, Probability, and Statistics

Students use appropriate technology such as spreadsheets, statistical software, and graphing calculators, to investigate and analyze data, including comparing data for distinct groups. Students present data in a variety of formats and give a rationale for their choices. They use matrices to represent and manipulate data, and they learn how certain representations can introduce bias into the analysis of data. They use basic measures of central tendency, dispersion, and skewness to describe and analyze data. With bivariate data, they derive and interpret the curve of best fit and use that curve to make predictions. They make hypotheses and test them using arguments based on data and learn to evaluate arguments and conclusions based on data.

Students learn a mathematical formulation for probability which allows them to calculate probabilities of simple and compound events and to determine dependence and independence. They determine probabilities using counting procedures, tables, trees, area models, and formulas for combinations and permutations. Extending their work with discrete mathematics, students use vertex-edge graphs to solve network problems and investigate the connections between networks and matrices. Students use induction, iteration, and recursion to state and solve problems.

Introductory Mathematics

Introductory Mathematics provides students a survey of preparatory topics for high school mathematics, including the foundations for high school Algebra and Geometry. Appropriate technology, from manipulatives to calculators, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will understand and compute with real numbers and simplify and evaluate algebraic expressions to solve problems.

1.1 Identify subsets of the real number system.

1.2 Estimate and compute with rational numbers.

1.3 Compare, order, and convert among fractions, decimals (terminating and non-terminating), and percents.

1.4 Solve problems involving percent of increase and percent of decrease.

1.5 Use scientific notation to express large numbers and numbers less than one. Express in standard form numbers given in scientific notation.

1.6 Use rules of exponents.

1.7 Solve problems involving exponents and scientific notation.

1.8 Estimate the square root of a number between two consecutive integers; using a calculator, find the square root of a number to the nearest tenth.

1.9 Determine the absolute value of a number.

1.10 Identify, explain, and apply the commutative, associative, and distributive properties, inverses, and identities in algebraic expressions.

1.11 Simply algebraic expressions.

1.12 Analyze problem situations, select appropriate strategies, and use an organized approach to solve multi-step problems.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties and relationships in geometry and standard and customary units of measurement to solve problems.

2.1 Use geometric concepts and modeling to interpret and solve problems.
2.2 Calculate distances and areas from scale drawings and maps.
2.3 Find the surface area of rectangular solids and cylinders.
2.4 Use models to investigate the relationship of the volume of a cone to a cylinder and a pyramid to a prism with the same base and height.
2.5 Find the volume of prisms, cylinders, pyramids, and cones, with and without models.
2.6 Use the Pythagorean Theorem to solve problems.
2.7 Determine the effect on the volume of solid figures when one or more dimension is changed.
2.8 Solve problems related to similar and congruent figures.
2.9 Locate, give the coordinates of, and graph plane figures which are the results of rotations (multiples of 90°). Graph plane figures which are similar to a given figure (dilations.)
2.10 Identify and draw 3-dimensional figures from different perspectives (top, side, front, corner); use appropriate technology.
2.11 Build 3-dimensional figures given various views.
2.12 Select appropriate units and tools for measurement tasks within problem-solving situations; determine precision and check for reasonableness of results.

Patterns, Relationships, and Functions

Goal: The learner will demonstrate an understanding of patterns and simple linear relationships to solve problems.

3.1 Use formulas in problem-solving situations.
3.2 Solve one and two-step linear equations and inequalities.
3.3 Graph a linear equation by determining ordered pairs. Locate ordered pairs which satisfy a given linear inequality.
3.4 Investigate the concept of slope.
3.5 Describe, extend, analyze and create a wide variety of geometric and numerical patterns, such as Pascal's triangle or the Fibonacci sequence.

Data, Probability, and Statistics

Goal: The learner will collect, display, and interpret data to solve problems.

4.1 Interpret and construct box plots.
4.2 Collect data involving two variables and display on a scatter plot; interpret results; identify positive and negative relationships.
4.3 Interpret the mean, explain its sensitivity to extremes, and explain its use in comparison with the median and the mode.
4.4 Evaluate arguments based on data. Investigate random vs. biased sampling.
4.5 Find the probability of independent and dependent events.
4.6 Make predictions based on theoretical probabilities and experimental results

Algebra I

Algebra I continues the study of algebraic concepts including operations with real numbers and polynomials, relations and functions, creation and application of linear functions and relations, and an introduction to nonlinear functions. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with real numbers and polynomials to solve problems.

1.1 Operate with real numbers to solve a variety of problems.
  a) Apply the laws of exponents to perform operations on expressions with integral exponents.
  b) Evaluate absolute value expressions.
  c) Evaluate radical expressions.
  d) Evaluate algebraic expressions.
1.2 Operate with polynomials.
  a) Add, subtract, and multiply polynomials.
  b) Divide polynomials by monomial divisors.
1.3 Factor polynomials.
  a) Find the greatest common factor of a polynomial.
  b) Factor quadratic expressions.

Spatial Sense, Measurement, and Geometry

Goal: The learner will solve problems in a geometric context.

2.1 Use formulas and algebraic expressions (from science, geometry, statistics, etc.) to solve problems.
2.2 Describe, extend, and express algebraically a wide variety of geometric patterns.

Patterns, Relationships, and Functions

Goal: The learner will graph and use relations and functions to solve problems.

3.1 Translate word phrases and sentences into expressions and equations and vice versa.

3.2 Identify properties and relationships of data in tables, graphs, and equations.

3.3 Define and distinguish between relations and functions, dependent and independent variables, domain and range.

3.4 Graph and interpret in the context of the problem, relations and functions on the coordinate plane. Include linear equations and inequalities, quadratics, and exponentials.

3.5 Determine and use slopes of linear relationships to solve problems.
  a) Find the slope of a line given the graph of the line, an equation of the line, or two points on the line.
  b) Describe the slope of the line in the context of a problem situation.

3.6 Write the equation of and graph linear relationships given the following information:
  a) Slope and y-intercept
  b) Slope and one point on the line
  c) Two points on the line

3.7 Investigate and determine the effects of changes in slope and intercepts on the graph and equation of a line.
  a) Change only slope.
  b) Change only the x- or y-intercept.
  c) Change the slope and an intercept.

3.8 Use linear equations or inequalities to solve problems. Solve by:
  a) Graphing.
  b) Using properties of equality; justify steps used.

3.9 Use systems of linear equations or inequalities in two variables to solve problems. Determine the solution by:
  a) Graphing.
  b) Substitution.
  c) Elimination.

3.10 Graph quadratic functions.
  a) Locate the intercepts and the vertex.
  b) Recognize the x-intercepts of the function as the solutions of the equation.

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3.11 Use quadratic equations to solve problems. Solve by:
  a) Factoring.
  b) Locating points on the graph.

3.12 Use formulas and graphs to solve problems involving exponential functions. Solve a problem by:
  a) Locating points on the graph.
  b) Evaluating an exponential expression.

Data, Probability, and Statistics

Goal: The learner will collect and interpret data to solve problems.

4.1 Use matrices to display and interpret data.

4.2 Recognize and identify linear and non-linear data.

4.3 Create and use linear models based on real data.
  a) Graph the data.
  b) Write a linear equation which models a set of real data.
  c) Describe the slope and intercepts in the context of the data.
  d) Check the model for goodness-of-fit and use the model to make predictions.

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Geometry

Geometry continues students' study of geometric concepts building upon middle school topics. Students will move from an inductive approach to deductive methods of proof in their study of geometric figures. Two- and three-dimensional reasoning skills will be emphasized and students will broaden their use of the coordinate plane to include transformations of geometric figures. Appropriate technology, from manipulatives to calculators and graphics software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with real numbers to solve problems in a geometric context.

1.1 Select appropriate operations and solve a variety of application problems using real numbers.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties of geometric figures to solve problems and write proofs.

2.1 Identify, name, and draw sets of points, such as line, ray, segment, and plane.
2.2 Identify the coordinates of a point in a plane or in space.
2.3 Find the length and the midpoint of a segment in two or three dimensions to solve problems.
2.4 Use inductive reasoning and the tools of construction to reach conclusions.
2.5 Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
2.6 Write and interpret conditional statements including the converse, inverse, and contrapositive.
2.7 Write direct (two-column, paragraph, or flow) and indirect proofs.

2.8 Use properties, definitions, and theorems of angles and lines to solve problems and write proofs, related to:
- a) Adjacent, vertical, linear pair, complementary and supplementary angles.
- b) The segment addition postulate and the angle addition postulate.
- c) Angle bisectors, segment bisectors, and perpendicular bisectors.
- d) Special pairs of angles formed by parallel lines and a transversal.
- e) Skew, parallel, and perpendicular lines.

2.9 Use properties, definitions, and theorems of polygons to solve problems related to:
- a) Modeling and describing polygons (convex, concave, regular, nonregular).
- b) The interior and exterior angles of a convex polygon.
- c) Congruent and similar polygons.

2.10 Recognize, identify, and model regular and non-regular polyhedra.

2.11 Use coordinate geometry to confirm properties of polygons.

2.12 Develop and use properties of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.

2.13 Develop and use properties of triangles to solve problems and write proofs related to:
- a) The relationships of the lengths of the sides and measures of the angles.
- b) Similar triangles and the relationship of their corresponding parts.
- c) Congruent triangles and their corresponding parts.
- d) Isosceles and equilateral triangles.
- e) Altitudes, perpendicular bisectors, angle bisectors, and medians.

2.14 Investigate and use properties of triangles to solve problems and write proofs related to:
- a) The interior and exterior angles of a triangle.
- b) The segment joining the midpoints of two sides of a triangle.
- c) Segments divided proportionally.

2.15 Apply properties of right triangles to solve problems using:
- a) The geometric mean.
- b) The Pythagorean Theorem and its converse.
- c) The relationships in special right triangles.
- d) The definitions of sine, cosine, and tangent.

2.16 Develop and use properties of circles to solve problems and write proofs related to:
- a) The definition of a circle and sets of points related to the circle.
- b) The equation of a circle, its center and radius length.
- c) Congruent and concentric circles.
- d) Circles and their common tangents.
- e) Circumscribed and inscribed figures.

2.17 Apply properties of circles to solve problems involving:
  a) Arcs and angles of circles.
  b) The chords, tangents, secants, and radii of a circle.

2.18 Use spheres to solve problems related to the definition of a sphere and sets of points related to the sphere.

2.19 Use formulas to solve problems related to:
  a) The perimeter of a geometric figure and circumference of a circle.
  b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles.
  c) Arc lengths and the area of sectors of a circle.
  d) The ratio of the perimeters, areas, and volumes of similar geometric figures.
  e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Patterns, Relationships, and Functions

Goal: The learner will solve problems with geometric figures in the coordinate plane.

3.1 Use slopes to determine if two lines are parallel or perpendicular.

3.2 Write the equation of a line parallel or perpendicular to a given line through a given point.

3.3 Transform (translate, reflect, rotate, dilate) polygons in the coordinate plane; describe the transformation in simple algebraic terms.

Data, Probability, and Statistics

Goal: The learner will use geometric figures to solve problems involving probability.

4.1 Use length, area, and volume to solve problems involving probability.

Algebra II

Algebra II continues students' study of advanced algebraic concepts including functions, polynomials, rational expressions, complex numbers, systems of equations and inequalities, and matrices. Emphasis should be placed on practical applications and modeling. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with numbers and polynomials to solve problems.

1.1 Operate with numbers to solve problems.
   - a) Simplify and perform operations with radical expressions.
   - b) Simplify expressions involving rational exponents.
   - c) Use logarithms and exponents to solve problems.
   - d) Define complex numbers and perform basic operations with them.

1.2 Operate with algebraic expressions to solve problems.
   - a) Expand powers of binomials using Pascal's triangle or the binomial theorem.
   - b) Divide one polynomial by another of a lower degree using either synthetic division or the division algorithm.
   - c) Factor polynomials and other algebraic expressions completely over the real numbers.
   - d) Find sums, differences, products and quotients of rational algebraic expressions.
   - e) Simplify complex fractions.
   - f) Solve problems using direct, inverse, combined and joint variation.

Spatial Sense, Measurement, and Geometry

Goal: The learner will describe geometric figures algebraically in the coordinate plane.

2.1 Write the equations in standard form of circles and parabolas; graph.
2.2 Graph ellipses and hyperbolas given the equations.

Patterns, Relationships, and Functions

Goal: The learner will use relations and functions to solve problems.

3.1 Describe graphically, algebraically and verbally real-world phenomena as functions; identify the independent and dependent variables.
3.2 Translate among graphic, algebraic, and verbal representations of relations.
3.3 Graph relations and functions and find the zeros of functions.
3.4 Find the composition and inverse of functions.
3.5 Use quadratic equations and inequalities to solve problems. Solve by:
  a) Graphing.
  b) Factoring.
  c) Completing the square.
  d) Using the quadratic formula.
  e) Using properties of equality; justify steps needed.
3.6 Find and interpret the maximum and minimum values and the intercepts of a quadratic function.
3.7 Use polynomial equations (up to 4th degree) to solve problems. Solve by:
  a) Graphing.
  b) Factoring;
  c) Using properties of equality; justify steps used.
3.8 Find zeros, intercepts, and approximate the turning points of polynomial functions; describe them in the context of the problem.
3.9 Write a polynomial equation given its solutions.

3.10 Use rational equations to solve problems. Solve by:
   - a) Graphing; identify the asymptotes and intercepts.
   - b) Factoring.
   - c) Finding the zeros and asymptotes through analysis of the polynomials in the numerator and denominator.
   - d) Using properties of equality; justify steps used.

3.11 Use equations which contain radical expressions to solve problems. Solve by:
   - a) Graphing.
   - b) Factoring.
   - c) Using properties of equality; justify steps used.

3.12 Use systems of two or more equations to solve problems. Solve by:
   - a) Elimination and/or substitution.
   - b) Graphing.
   - c) Using matrix equations of the form AX = B.

3.13 Use linear programming (systems of three or more inequalities) to solve problems.

3.14 Use equations and inequalities with absolute value to solve problems. Solve by:
   - a) Locating points on the number line.
   - b) Locating points on the coordinate plane.
   - c) Using properties of equality; justify steps used.

3.15 Write and graph exponential functions of the form $f(x) = a\,b^{x}$.

3.16 Recognize as inverses the exponential and logarithmic functions.

3.17 Use logarithmic and exponential equations to solve problems. Solve by:
   - a) Graphing.
   - b) Substitution.
   - c) Applying the inverse relationship.
   - d) Using properties of equality; justify steps used.

Data, Probability, and Statistics

Goal: The learner will collect, organize, and interpret data with functions of best-fit and matrices to solve problems.

4.1 Write and interpret an equation of a curve (linear, exponential, quadratic) which models a set of data.

4.2 Find the equation of the curve of best-fit (linear, exponential, quadratic) for a set of data. Interpret the constants, coefficients, and bases in the context of the data. Check the equation for goodness-of-fit and use the equation for predictions.

4.3 Use exponential equations of the form $f(x) = (1+r)^x$ where r is given as a rate of growth or decay to solve problems.

4.4 Operate with matrices to solve problems.

a) Add, subtract, and multiply matrices.

b) Find the inverse and determinant of a matrix.

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Technical Mathematics 1

Technical Mathematics 1 continues students' study of algebra, geometry, and probability and statistics, building upon middle school and Algebra I topics. Measurement of two- and three-dimensional figures, special relationships in right triangles, linear and quadratic functions, measures of central tendency, and counting algorithms for probability are the broad topics to be studied in an application-centered environment. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with real numbers to solve problems.

1.1 Solve a variety of application problems using real numbers; use calculators when appropriate.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties and relationships in geometry to solve problems.

2.1 Select and use measuring devices and appropriate units of measurement to solve problems.
2.2 Compare measurements to specified tolerances.
2.3 Use significant digits to indicate accuracy of measurement.
2.4 Interpret and construct maps and scale drawings.
2.5 Solve vector problems using scale drawings. Recognize and indicate magnitude and direction.

2.6 Use formulas to solve problems related to:
  a) The perimeter of a geometric figure and circumference of a circle.
  b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circle.
  c) Arc lengths and the areas of sectors of a circle.
  d) The ratio of the perimeters, areas, and volumes of similar geometric figures.
  e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

2.7 Solve for an unknown dimension or an unknown angle in both plane and solid shapes by creating models or diagrams.

2.8 Apply properties of right triangles to solve problems using:
  a) Geometric mean.
  b) Pythagorean Theorem and its converse.
  c) Relationships in special right triangles.
  d) Definitions of sine, cosine, and tangent.

Patterns, Relationships, and Functions

Goal: The learner will use relations and functions to solve problems.

3.1 Use slopes to determine if two lines are parallel or perpendicular.

3.2 Write the equation of a line parallel or perpendicular to a given line through a given point.

3.3 Graph relations and functions and find the zeros of functions; use graphing calculators when appropriate.

3.4 Use quadratic equations and inequalities to solve problems. Solve by:
  a) Graphing.
  b) Factoring.
  c) Completing the square.
  d) Using the quadratic formula.
  e) Using properties of equality; justify steps used.
  f) Finding and interpreting the maximum and minimum values and the intercepts of a quadratic function.

3.5 Use linear programming (systems of three or more inequalities) to solve problems.

3.6 Solve problems involving direct and inverse variation.

3.7 Determine domain and range in relations and functions.

Data, Probability, and Statistics

Goal: The learner will collect and interpret data to solve problems.

4.1 Use appropriate measures of central tendency (mean, mode, median) and variance (range, standard deviation) to describe and interpret sets of data.

4.2 Use an appropriate format (table, chart, graph, matrix) to present and analyze data.

4.3 Use formulas for permutations and combinations to determine the number of ways an event can occur.

4.4 Determine the probability of independent and dependent events.

Technical Mathematics 2

Technical Mathematics 2 continues students' study of advanced algebraic concepts including linear, quadratic, and exponential functions and matrices. Students will move from an inductive approach to deductive methods of proof in their study of geometric figures. Two- and three-dimensional reasoning skills will be emphasized and students will broaden their use of the coordinate plane to include transformations of geometric figures. Emphasis should be placed on practical applications and modeling. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with real numbers to solve problems.

1.1 Use logarithms and exponents to solve problems.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties and relationships in geometry to solve problems.

2.1 Identify and draw to scale 3-dimensional figures from different perspectives (top, side, front, corner).
2.2 Build 3-dimensional scale models from drawings given various views.
2.3 Identify the coordinates of a point in a plane or in space.
2.4 Find the length and the midpoint of a segment in two or three dimensions.
2.5 Use inductive reasoning and the tools of construction to reach conclusions.
2.6 Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
2.7 Write direct (two-column, paragraph, or flow) and indirect proofs.

2.8 Use properties and definitions of angles and lines to solve problems related to:
  a) Adjacent, vertical, linear pair, complementary and supplementary angles.
  b) Angle bisectors, segment bisectors, and perpendicular bisectors.
  c) Special pairs of angles formed by parallel lines and a transversal.
  d) Skew, parallel, and perpendicular lines.
2.9 Use properties and definitions of polygons to solve problems related to:
  a) Modeling and describing polygons (convex, concave, regular, nonregular).
  b) The interior and exterior angles of a convex polygon.
  c) Congruent and similar polygons.
2.10 Recognize, identify, and model regular polyhedra.
2.11 Use coordinate geometry to confirm properties of polygons.
2.12 Use properties and definitions of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems.
2.13 Use properties and definitions of triangles to solve problems related to:
  a) The relationships of the lengths of the sides and measures of the angles.
  b) Similar triangles and the relationship of their corresponding parts.
  c) Congruent triangles and their corresponding parts.
  d) Isosceles and equilateral triangles.
  e) Altitudes, perpendicular bisectors, angle bisectors, and medians.
2.14 Investigate and use properties of triangles to solve problems related to:
  a) The interior and exterior angles of a triangle.
  b) The segment joining the midpoints of two sides of a triangle.
  c) Segments divided proportionally.
2.15 Develop and use properties of circles to solve problems involving:
  a) The definition of a circle and sets of points related to the circle.
  b) The equation of a circle, its center and radius length.
  c) Congruent and concentric circles.
  d) Circles and their common tangents.
  e) Circumscribed and inscribed figures.
2.16 Apply properties of circles to solve problems involving:
  a) Arcs and angles of circles.
  b) The chords, tangents, secants, and radii of a circle.

Patterns, Relationships, and Functions

Goal: The learner will use relations and functions to solve problems.

3.1 Transform (translate, reflect, rotate, dilate) polygons in the coordinate plane; describe the transformation in simple algebraic terms.

3.2 Describe graphically, algebraically and verbally real-world phenomena as functions; interpret the independent and dependent variables.

3.3 Solve systems of two or more equations by:

a) Elimination and/or substitution.

b) Graphing.

c) Using matrix equations of the form $AX = B$.

3.4 Solve problems using combined and joint variation.

3.5 Write and graph exponential functions of the form $f(x) = a\,b^x$.

Data, Probability, and Statistics

Goal: The learner will collect and interpret data to solve problems.

4.1 Use length, area, and volume to solve problems involving probability.

4.2 Write and interpret an equation of a curve (linear, exponential, quadratic) which models a set of data.

4.3 Find the equation of the curve of best-fit (linear, exponential, quadratic) for a set of data. Interpret the constants, coefficients, and bases in the context of the data. Check the equation for goodness-of-fit and use the equation for predictions.

4.4 Use exponential equations of the form $f(x) = (1+r)^x$, where r is given as a rate of growth or decay, to solve problems. Solve by:

a) Locating points on the graph.

b) Evaluating the expression.

4.5 Operate with matrices to solve problems.

a) Use matrices to display and interpret data.

b) Add, subtract, and multiply matrices.

c) Find the inverse and determinant of a matrix.

Discrete Mathematics

Discrete Mathematics introduces students to the mathematics of networks, social choice, and decision making. The course extends students' application of matrix arithmetic and probability. Applications and modeling are central to this course of study. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will solve problems involving social choice and decision making.

1.1 Solve problems involving election methods: Plurality, Run-off, Sequential Run-off, Borda, Condorcet.

1.2 Solve problems involving weighted voting, voting power, and winning coalitions.

1.3 Solve problems involving estate division.

1.4 Solve problems involving continuous fair division.

1.5 Solve problems involving apportionment: including, but not limited to, Hamilton, Jefferson, Hill, Webster, Adams, Quota (Balinski and Young).

Spatial Sense, Measurement, and Geometry

Goal: The learner will use graphs to solve problems.

2.1 Define the terms associated with a graph (edges, vertices, degree, paths, circuits, connected, disconnected, and trees).

2.2 Represent problem situations using finite graphs and adjacency matrices.

2.3 Find the critical path(s) using PERT (Program and Evaluation Review Technique)

2.4 Find an Euler circuit or path, if it exists.

2.5 Find a Hamiltonian circuit or path, if it exists.

2.6 Solve problems involving Euler and Hamiltonian circuits.

2.7 Find the minimum-cost spanning tree for a given graph.

2.8 Incorporate graph coloring to solve real-world problems using the four color theorem and chromatic numbers.

2.9 Use binary expression trees to solve problems in Polish and reverse Polish notation.

2.10 Solve problems involving bin packing.

Patterns, Relationships, and Functions

Goal: The learner will use matrices, functions, sequences, and series to solve problems.

3.1 Solve problems requiring matrix operations.
  a) Solve linear systems through applications (Leontief Input-Output Model).
  b) Solve problems involving communication networks.
  c) Use transition matrices, such as Leslie Matrix and Markov Chains, to make predictions.
  d) Use matrices to produce coordinate transformations.
  e) Use matrices to determine harvesting strategies to stabilize a population.

3.2 Use recursive relations to solve problems.

3.3 Verify explicit (closed-form) definitions using mathematical induction.

3.4 Find explicit (closed form) definitions using finite differences and geometric or arithmetic formulas.

3.5 Use mixed recursion to solve problems involving growth and decay.

3.6 Use sequences and series to solve problems.
  a) Find the sum of a finite sequence.
  b) Find the sum of an infinite sequence.
  c) Determine if a given series converges or diverges.
  d) Represent a series by using sigma notation.

Data, Probability, and Statistics

Goal: The learner will solve problems involving counting and probability.

4.1 Use Venn diagrams to solve counting problems involving intersection and union of sets.
4.2 Use basic laws of logic to solve more complicated Venn diagram problems.
4.3 Solve problems using addition and multiplication principles.
4.4 Solve problems involving permutations and combinations, including independent, dependent, mutually exclusive, and circular.
4.5 Use experimental probability and simulations for probability models.
4.6 Find expected values and determine fairness.
4.7 Identify discrete random variables and use them to solve problems.
4.8 Derive and apply the Binomial Probability Theorem.

Advanced Mathematics

Advanced Mathematics provides students a complete study of trigonometry, as well as advanced algebra topics, analytic geometry, sequences and series, and data analysis. Applications and modeling should be included throughout the course of study. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The student will perform operations with numbers and vectors, and translate between coordinate systems.

1.1 Convert points in two dimensions between rectangular and polar coordinate systems.

1.2 Operate with vectors in two and three dimensions to solve problems.
  a) Add and subtract vectors; multiply vectors by a scaler.
  b) Define and find the inner product of vectors.
  c) Express vectors as the sum of unit vectors.

1.3 Convert complex numbers between rectangular and polar forms; use DeMoivre's Theorem to find roots and powers of complex numbers.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use trigonometric relationships and transformations to solve problems.

2.1 Develop and use the trigonometric relationships to solve problems.
  a) Determine the values of sine and cosine as represented on the unit circle; include multiples of $\pi/6$, $\pi/4$, $\pi/3$, $\pi/2$, and π.
  b) Find the values of other trigonometric relationships when given the value of one trigonometric relationship.
  c) Use the unit circle to develop, recognize, and validate trigonometric identities.
  d) Identify the relationship between trigonometry in degree mode and trigonometry in radian mode.
  e) Find the radian measure that corresponds to a given angle or arc length.

2.2 Develop and use the Law of Sines and Law of Cosines to solve problems involving triangles and vectors.

2.3 Use coordinate geometry to describe solid figures.

a) Identify the coordinates of the vertices of polyhedra.
b) Transform polygons in space; describe the results.
c) Transform polygons and polyhedra; use matrix operations to describe the transformation.

Patterns, Relationships, and Functions

Goal: The learner will use relations and functions to solve problems.

3.1 Graph and use the basic functions (constant, linear, quadratic, cubic, square root, absolute value, reciprocal, rational, trigonometric, exponential, logarithmic, piecewise defined, and greatest integer) to solve problems.

a) Compare information given by local behavior versus global behavior.
b) Determine the symmetry of a given graph.
c) Identify continuous and discontinuous functions and locate points of discontinuity.
d) Graph transformations and combinations of transformations for all the functions.
e) Find coordinates of maximum or minimum points of a given function.
f) Write the equation of a function given a set of data or other descriptions of its behavior.
g) Solve equations and inequalities; justify steps used.
h) Compose two functions and find the domain of the composition.
i) Analyze a function by decomposing it into simpler functions.
j) Find the inverse of a function and the domain of the inverse.

3.2 Graph and use the basic quadratic relations (parabola, circle, ellipse, hyperbola) to solve problems.

- a) Compare information given by local behavior versus global behavior.
- b) Determine the symmetry of a given graph.
- c) Identify continuous and discontinuous relations and locate points of discontinuity.
- d) Graph transformations and combinations of transformations for all the relations.
- e) Find coordinates of maximum or minimum points of a given relation.
- f) Write the equation of a relation given a set of data, characteristics, or other descriptions of its behavior.
- g) Solve equations and inequalities; justify steps used.
- h) Analyze and graph a relation by decomposing it into simpler relations.
- i) Find the inverse of a relation and the domain of the inverse.

3.3 Use trigonometric and inverse trigonometric functions to solve problems.

- a) Express the tangent, cotangent, secant, and cosecant functions in terms of sine and cosine.
- b) Sketch a graph of each of the six trigonometric functions and identify the period of each.
- c) Recognize and graph transformations of each of the six trigonometric functions.
- d) Use graphs to develop, recognize, and validate trigonometric identities.
- e) Solve trigonometric equations and inequalities; justify steps used.
- f) Find values of inverse trigonometric functions, applying appropriate domain and range restrictions.
- g) Evaluate and graph compositions of trigonometric and inverse trigonometric functions.

3.4 Use polar equations to solve problems.

- a) Graph polar equations; identify transformations related to changes in constants and coefficients.
- b) Translate quadratic relations between rectangular and polar (parametric) forms; graph.
- c) Graph and model real world phenomena using parametric equations.

Data, Probability, and Statistics

Goal: The learner will create and use models of data for reporting and analysis.

4.1 Use sequences and series to solve problems.

- a) Find indicated terms in sequences.
- b) Use summative notation to describe the sums in a series.
- c) Find the sum of a finite series and of an infinite geometric series.
- d) Find the limit of an infinite sequence.
- e) Find whether a given series converges or diverges.

4.2 Create and use mathematical models of linear, polynomial, exponential, trigonometric, power, and logarithmic functions to solve problems.

- a) Linearize data using concepts of composition and inverses in order to find a model for data. Rewrite the linear equation that models linearized data to fit the original curved data.
- b) Model growth and decay using recursive relations; compare with $y = ab^x$ and $y = (1 + r)^x$ forms.
- c) Use trigonometric functions to model periodic phenomena.
- d) Find the model of the curve of best-fit (linear, polynomial, exponential, power, logarithmic, and logistic) for a set of data.
- e) Interpret constants, coefficients, and bases in the context of the data being modeled.
- f) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.

4.3 Summarize distributions of univariate data to solve problems.

- a) Determine measures of central tendency (median, mean) and spread (range, standard deviation).
- b) Identify data by its position in the distribution (quartiles, percentiles).
- c) Recognize, define, and use the normal distribution curve.

Advanced Placement Statistics

AP Statistics introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students will observe patterns and departures from patterns, decide what and how to measure, produce models using probability and simulation, and confirm models. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration and Numerical Operations

Goal: The learner will operate with real numbers to summarize data.

1.1 Summarize distributions of univariate data by:
  a) Measuring center: median and mean.
  b) Measuring spread: range, interquartile range, and standard deviation.
  c) Measuring position: quartiles, percentiles, and standardized scores (z-scores).
  d) Using boxplots.
  e) Analyzing the effect of changing units on summary measures.

Spatial Sense, Measurement, and Geometry

Goal: The learner will display data and use the display for analysis.

2.1 Interpret graphical displays of distributions of univariate data (dotplots, stemplots, histograms) with attention to:
  a) Center and spread.
  b) Clusters and gaps.
  c) Outliers and other unusual features.
  d) Shape.

2.2 Compare distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots) by comparing:
  - a) Center and spread: within group, and between group variation.
  - b) Clusters and gaps.
  - c) Outliers and other unusual features.
  - d) Shapes.

Patterns, Relationships, and Functions

Goal: The learner will use best-fit functions to study patterns and departures from patterns.

3.1 Analyze bivariate data using:
  - a) Scatterplots.
  - b) Correlation and linearity.
  - c) Least squares regression line.
  - d) Residual plots, outliers, and influential points.
  - e) Transformations to achieve linearity: logarithmic and power transformations.

Data, Probability, and Statistics

Goal: The learner will collect data in a well-developed plan and use probability to anticipate the distribution of data.

4.1 Analyze catagorical data using:
  - a) Frequency tables.
  - b) Marginal and joint frequencies for two-way tables.
  - c) Conditional relative frequencies and association.

4.2 Understand and compare methods of data collection including:
  - a) Census.
  - b) Sample survey.
  - c) Designed experiment.
  - d) Observational study.

4.3 Understand principles, methods, and difficulties in sample surveys including:

a) Simple random sampling and systematic sampling.

b) Sampling error (the variation inherent in a survey).

c) Stratifying to reduce variation.

d) Cluster sampling.

e) Sources of bias in a survey.

4.4 Understand principles, methods, and difficulties in designed experiments including:

a) Treatments, experimental units, and randomization;

b) Replication.

c) Control groups.

d) Confounding, placebo effects, blinding.

e) Completely randomized design.

f) Blocked experiments and paired comparison design.

g) Generalizability of results.

4.5 Understand and use probability with:

a) Relative frequency definition of probability;

b) Law of large numbers.

c) Addition rule, multiplication rule, conditional probability, and independence.

d) Discrete random variables and their probability distributions.

e) Simulation of probability distributions, including binomial and geometric.

f) Mean (expected value) and standard deviation of a random variable, including binomial.

g) Mean and standard deviation for sums and differences of independent random variables.

4.6 Understand normal distributions through:

a) Their properties.

b) Models for distributions of measurements.

c) Tables of standard normal probability (Z).

4.7 Understand and simulate sampling distributions for:

a) Sample proportion.

b) Sample mean.

c) Difference between two independent sample proportions.

d) Difference between two independent sample means.

4.8 Understand the Central Limit Theorem and its importance.

4.9 Understand and construct confidence intervals for:

- a) Single proportions (using Z).
- b) Single means (using Z).
- c) Single means (using t distribution).
- d) Mean differences from paired samples (using t).
- e) Differences between two proportions (using Z).
- f) Differences between two independent means (using Z).
- g) Differences between two independent means (using t).
- h) The slope of the least squares line (using t).

4.10 Understand and perform tests of significance, including:

- a) Logic of significance testing, null and alternative hypotheses; p-values; one- and two-sided tests.
- b) Test for a proportion (using Z).
- c) Test for a mean (using both Z and t).
- d) Test for a mean difference from paired samples (using t).
- e) Test for a difference between two proportions (using Z).
- f) Test for a difference between two independent means (using both Z and t).
- g) Test for the slope of the least-squares line (using t).
- h) Tests for goodness of fit, homogeneity of proportions, and independence (using chi-square).

Advanced Placement Calculus

AP Calculus develops the student's understanding of the concepts of calculus (functions, graphs, limits, derivatives and integrals) and provides experience with its methods and applications. The course encourages the geometric, numerical, analytical, and verbal expression of concepts, results, and problems. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration and Numerical Operations

Goal: The learner will evaluate and operate with expressions and functions.

1.1 Calculate limits (including one-sided limits) using algebra.

1.2 Find the slope of a curve at a point.

1.3 Find the derivative of basic functions, including X^r, exponential, logarithmic, trigonometric, and inverse trigonometric.

1.4 Use basic rules for derivatives of sum, product and quotient of functions.

1.5 Use chain rule and implicit differentiation.

1.6 Evaluate definite integrals using basic properties.

1.7 Use the Fundamental Theorem to evaluate definite integrals.

1.8 Find the antiderivative of basic functions.

1.9 Find the antiderivative by substitution of variables.

1.10 Use implicit differentiation to find derivatives of inverse functions.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use graphical displays to investigate the geometric behavior of calculus concepts.

2.1 Use available technology to graph, analyze, predict, and explain observed local and global behavior of functions.

2.2 Recognize asymptotes in terms of graphical behavior.

2.3 Apply geometric understanding of graphs of continuous functions (Intermediate Value Theorem, Extreme Value Theorem).

2.4 Find the equation of tangent lines to a curve at a point and use it to approximate function values.

2.5 Apply Mean Value Theorem and identify its geometric consequences.

2.6 Use derivatives to analyze graphs of curves.

2.7 Evaluate Riemann sums.

2.8 Use the Fundamental Theorem to represent particular antiderivatives both graphically and analytically.

Patterns, Relationships, and Functions

Goal: The learner will use use relations, functions, and their derivitives and integrals to solve problems.

3.1 Describe asymptotic behavior in terms of limits involving infinity.

3.2 Compare relative magnitudes of functions and their rates of change.

3.3 Determine continuity of functions by use of limits.

3.4 Recognize definition of derivative.

3.5 Examine relationship between differentiability and continuity.

3.6 Find instantaneous rate of change as the limit of average rate of change.

3.7 Compare and interpret characteristics of graphs of f, f', and f''.

3.8 Model a written description of a physical situation with a differential equation and vice-versa.

3.9 Use derivatives to solve optimization problems.

3.10 Use derivatives to model rates of change.

3.11 Interpret the derivative as a rate of change in varied applied contexts, including velocity, speed, and acceleration.

3.12 Interpret the definite integral as a limit of Riemann sums.

3.13 Recognize the definite integral of the rate of change of a quantity over an interval as the change of the quantity over the interval:

$$\int_a^b f'(x)dx = f(b) - f(a)$$

3: 3

3.14 Use integrals to model physical, social, or economic situations. Specific applications should include finding the area of a region, the volume of a solid with known cross sections, the average value of a function, and the distance traveled by a particle along a line.

3.15 Find a specific antiderivative using initial conditions.

3.16 Solve separable differential equations and use them as models.

Data, Probability, and Statistics

Goal: The learner will use graphs and tables of data to investigate concepts of calculus.

4.1 Estimate limits from graphs or tables of data.

4.2 Approximate rates of change from graphs and tables of values.

4.3 Approximate definite integrals numerically with Riemann sums and Trapezoidal Rule.

Integrated Mathematics 1

Integrated Mathematics 1 provides students the opportunity to study traditional topics from algebra, geometry, probability, and statistics in a problem-centered, connected approach. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with real numbers to solve problems.

1.1 Apply the laws of exponents to perform operations on expressions with integral exponents.
1.2 Evaluate algebraic expressions including absolute value and radical expressions.
1.3 Solve problems using direct and inverse variation.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties of geometric figures to solve problems and write proofs.

2.1 Identify, name, and draw sets of points, such as line, ray, segment, and plane.
2.2 Identify the coordinates of a point in a plane or in space.
2.3 Use inductive reasoning and the tools of construction to reach conclusions.
2.4 Write and interpret conditional statements including the converse, inverse, and contrapositive.
2.5 Use properties and definitions of polygons to solve problems related to:
  a) Modeling and describing polygons (convex, concave, regular, nonregular).
  b) The interior and exterior angles of a convex polygon.
  c) Congruent and similar polygons.
2.6 Investigate and use properties of triangles to solve problems and write proofs related to:
  a) The interior and exterior angles of a triangle.
  b) The segment joining the midpoints of two sides of a triangle.
  c) Segments divided proportionally.

2.7 Develop and use properties of triangles to solve problems and write proofs related to:
  - a) The relationships of the lengths of the sides and measures of the angles.
  - b) Similar triangles and the relationship of their corresponding parts.
  - c) Congruent triangles and their corresponding parts.
  - d) Isosceles and equilateral triangles.
  - e) Altitudes, perpendicular bisectors, angle bisectors, and medians.

2.8 Use formulas to solve problems related to:
  - a) The perimeter of a geometric figure and circumference of a circle.
  - b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles.
  - c) Arc length and the area of the sector of a circle.
  - d) The ratio of the perimeters, areas, and volumes of similar geometric figures.
  - e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Patterns, Relationships, and Functions

Goal: The learner will graph and use relations and functions to solve problems.

3.1 Translate word phrases and sentences into expressions and equations and vice versa.

3.2 Identify properties and relationships of data in tables, graphs, and equations.

3.3 Define and distinguish between relations and functions, dependent and independent variables, domain and range.

3.4 Graph and interpret in the context of the problem, relations and functions on the coordinate plane. Include linear equations and inequalities, and exponentials.

3.5 Determine and use slopes of linear relationships to solve problems.
  - a) Find the slope of a line given the graph of the line, an equation of the line, or two points on the line.
  - b) Describe the slope of the line in the context of a problem situation.

3.6 Write the equation of and graph linear relationships given relevant information.

- a) Slope and y-intercept.
- b) Slope and one point on the line.
- c) Two points on the line.

3.7 Investigate and determine the effects of changes in slope and intercepts on the graph and equation of a line.

- a) Change only slope.
- b) Change only the x- or y-intercept.
- c) Change the slope and an intercept.

3.8 Use linear equations or inequalities to solve problems. Solve by:

- a) Graphing.
- b) Using properties of equality; justify steps used.

3.9 Use systems of linear equations or inequalities in two variables to solve problems. Determine the solution by:

- a) Graphing.
- b) Substitution.
- c) Elimination.

3.10 Use formulas and graphs to solve problems involving exponential functions. Solve a problem by:

- a) Locating points on the graph.
- b) Evaluating an exponential expression.

Data, Probability, and Statistics

Goal: The learner will use data summaries, probability, and linear models to investigate data and solve problems.

4.1 Use basic measures of central tendency (median, mean) and dispersion (range, standard deviation) to describe and analyze data.

4.2 Use length, area, and volume to solve problems involving probability.

4.3 Recognize and identify linear and non-linear data.

4.4 Create and use linear models based on real data.
- a) Graph the data.
- b) Write a linear equation which models a set of real data.
- c) Describe the slope and intercepts in the context of the data.
- d) Check the model for goodness-of-fit and use the model to make predictions.

Integrated Mathematics 2

Integrated Mathematics 2 continues students' study of traditional topics from algebra, geometry, probability, and statistics in a problem-centered, connected approach. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will perform operations with numbers and polynomials to solve problems.

1.1 Operate with numbers to solve problems.
  a) Simplify and perform operations with radical expressions.
  b) Simplify expressions involving rational exponents.
  c) Define complex numbers and perform basic operations with them.
1.2 Operate with algebraic expressions to solve problems.
  a) Add, subtract, and multiply polynomials.
  b) Divide polynomials by monomial divisors.
  c) Expand powers of binomials using Pascal's triangle or the binomial theorem.
  d) Divide one polynomial by another of a lower degree using either synthetic division or the division algorithm.
  e) Factor polynomials and other algebraic expressions completely over the real numbers.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties of geometric figures to solve problems and write proofs.

2.1 Find the length and the midpoint of a segment in two or three dimensions to solve problems.
2.2 Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
2.3 Write direct (two-column, paragraph, or flow) and indirect proofs.

2.4 Use coordinate geometry to confirm properties of polygons.

2.5 Transform (translate, reflect, rotate, dilate) polygons in the coordinate plane; describe the transformation in simple algebraic terms.

2.6 Use properties, definitions, and theorems related to angles and lines to solve problems and write proofs, regarding:
  a) Adjacent, vertical, linear pair, complementary and supplementary angles.
  b) The segment addition postulate and the angle addition postulate.
  c) Angle bisectors, segment bisectors, and perpendicular bisectors.
  d) Special pairs of angles formed by parallel lines and a transversal.
  e) Skew, parallel, and perpendicular lines.

2.7 Use properties, definitions, and theorems related to quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.

2.8 Apply properties of right triangles to solve problems using:
  a) Geometric mean.
  b) Pythagorean Theorem and its converse.
  c) Relationships in special right triangles.
  d) Definitions of sine, cosine, and tangent.

Patterns, Relationships, and Functions

Goal: The learner will graph and use relations and functions to solve problems.

3.1 Describe graphically, algebraically and verbally real-world phenomena as functions; identify the independent and dependent variables.

3.2 Graph relations and functions and find the zeros of functions.

3.3 Use quadratic equations to solve problems. Solve by:
  a) Graphing.
  b) Factoring.
  c) Completing the square.
  d) Using the quadratic formula.
  e) Using properties of equality; justify steps used.

3.4 Find and interpret the maximum and minimum values and the intercepts of a quadratic function; recognize the x-intercepts of the function as the solutions of the equation.

3.5 Use slopes to determine if two lines are parallel or perpendicular.

3.6 Write the equation of a line parallel or perpendicular to a given line through a given point.

3.7 Use systems of two or more equations to solve problems. Solve by:

- a) Elimination, substitution.
- b) Graphing.
- c) Using matrix equations of the form $AX = B$.

3.8 Use linear programming (systems of three or more inequalities) to solve problems.

3.9 Write and graph exponential functions of the form $f(x) = a\ b^x$.

Data, Probability, and Statistics

Goal: The learner will use probability and matrices to solve problems.

4.1 Define and use permutations and combinations in counting situations.

4.2 Perform experiments and compare theoretical and empirical results.

4.3 Calculate the expected value of an event; use expected value to solve problems.

4.4 Operate with matrices to solve problems.

- a) Use matrices to display and interpret data.
- b) Add, subtract, and multiply matrices; use graphing calculators when appropriate.
- c) Find the inverse and determinant of a matrix; use graphing calculators when appropriate.

Integrated Mathematics 3

Integrated Mathematics 3 provides students a problem-centered, connected study of advanced algebra topics, geometry, and data analysis. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Number Sense, Numeration, and Numerical Operations

Goal: The learner will operate with numbers and algebraic expressions to solve problems.

1.1 Use logarithms and exponents to solve problems.

1.2 Operate with algebraic expressions to solve problems.
   - a) Find sums, differences, products and quotients of rational algebraic expressions.
   - b) Simplify complex fractions.
   - c) Solve problems using combined and joint variation.

Spatial Sense, Measurement, and Geometry

Goal: The learner will use properties of geometric figures to solve problems and write proofs.

2.1 Use properties, definitions, and theorems related to circles to solve problems and write proofs involving:
   - a) The definition of a circle and sets of points related to the circle.
   - b) The equation of a circle, its center and radius length.
   - c) Congruent and concentric circles.
   - d) Circles and their common tangents.
   - e) Circumscribed and inscribed figures.

2.2 Apply properties of circles to solve problems involving:
   - a) Arcs and angles of circles.
   - b) Chords, tangents, secants, and radii of a circle.

2.3 Use spheres to solve problems related to the definition of a sphere and sets of points related to the sphere.

2.4 Recognize, identify, and model regular and non-regular polyhedra.

2.5 Use coordinate geometry to describe solid figures.
  a) Identify the coordinates of the vertices of polyhedra.
  b) Transform polygons in space; describe the results.
  c) Transform polyhedra in space; describe the transformation in algebraic terms.

2.6 Write the equations in standard form of circles and parabolas and graph.

2.7 Graph ellipses and hyperbolas given the equations.

Patterns, Relationships, and Functions

Goal: The learner will graph and use relations and functions to solve problems.

3.1 Translate among graphic, algebraic, and verbal representations of relations.

3.2 Find the composition and inverse of functions.

3.3 Use equations, and inequalities with absolute value to solve problems by:
  a) Locating points on the number line.
  b) Locating points on the coordinate plane.
  c) Using properties of equality and justifying steps needed.

3.4 Use polynomial equations (up to 4th degree) to solve problems. Solve by:
  a) Graphing.
  b) Factoring.
  c) Finding zeros, intercepts, and approximate the turning points of polynomial functions; describe in the context of the problem.
  d) Using properties of equality; justify steps used.
  e) Write a polynomial equation given its solutions.

3.5 Solve problems involving rational equations. Solve by:
  a) Graphing; identify the asymptotes and intercepts.
  b) Factoring.
  c) Finding the zeros and asymptotes through analysis of the polynomials in the numerator and denominator.
  d) Using properties of equality; justify steps used.

3.6 Solve equations which contain radical expressions. Solve by:
   a) Graphing.
   b) Factoring.
   c) Using properties of equality; justify steps used.

3.7 Recognize as inverses the exponential and logarithmic functions.

3.8 Use logarithmic and exponential equations to solve problems. Solve by:
   a) Graphing.
   b) Substitution.
   c) Applying the inverse relationship.
   d) Using properties of equality; justify steps used.

Data, Probability, and Statistics

Goal: The learner will collect, organize, and interpret data with functions of best-fit to solve problems.

4.1 Write and interpret an equation of a curve (linear, exponential, quadratic) which models a set of data.

4.2 Find the equation of the curve of best-fit (linear, exponential, quadratic) for a set of data. Interpret the constants, coefficients, and bases in the context of the data. Check the equation for goodness-of-fit and use the equation for predictions.

4.3 Use exponential equations of the form $f(x) = (1 + r)^x$ where r is given as a rate of growth or decay to solve problems.

SCIENCE

Standard Course of Study and Grade Level Competencies

K-12

SCIENCE

Public Schools of North Carolina
Department of Public Instruction

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Science

SCIENCE

PHILOSOPHY

The science component of the *North Carolina Standard Course of Study is* designed to assist educators in planning, developing, implementing, and assessing a science program of study. A *thorough understanding of the philosophical section of the Standard Course of Study is essential to implementing an effective science program.* The curriculum philosophy contains the guiding principles on which all science instruction should be based. The science curriculum is designed to reflect a developmental approach expressing scope and sequence in a spiral format. Five PROGRAM GOALS permeate the science curriculum. Objectives under these goals expand in complexity as students progress from kindergarten through grade 12. The five PROGRAM GOALS reflect integration within the sciences and between science and other subject areas.

The five PROGRAM GOALS and their objectives are listed separately by each course and grade level. *These* GOALS *are not to be taught in isolation!* Science content goals are designed to be integrated with the other four PROGRAM GOALS. For example, teaching the concept of density should involve students in activities that stress science process skills and manipulative skills, contribute to the development of positive attitudes toward science, and contribute to an understanding of the nature of science.

MISSION STATEMENT:

To ensure that all students become scientifically literate.

Scientific literacy implies an understanding of basic science concepts and the scientific processes of reasoning. The scientifically literate person has a substantial knowledge of concepts, conceptual networks, and process skills which enable the individual to continue to learn and think logically. This individual both appreciates the value of science and technology in society and understands their limitations. North Carolina students can achieve scientific literacy through an instructional program based on the goals in the Science Component of the *Standard Course of Study.*

BELIEFS:

1. All students can learn and succeed in science.
2. Understanding science is essential for the survival of a free, democratic society.
3. Scientific literacy is essential for participation in an increasingly complex scientific society.
4. Success in science requires concept development through active participation in scientific processes and problem solving.
5. Experiential science instruction must be available to every student on a regular basis at all grade levels.

These belief statements are based on empirical evidence and priorities established by state and national government(s) and professional societies. Research clearly indicates that all students can learn and succeed in science. Higher expectations do not imply that all students should or will become scientists or that all students will achieve the same level of understanding. All students can succeed in understanding science with appropriate instruction as implied in the philosophy of this *Standard Course of Study.*

It is widely recognized that a scientifically literate society is essential if individuals and this nation are to successfully compete in a growing complex and technologically global society. Current national and state priorities established to improve science education are the most intensive witnessed in this century.

Research in science education supports the need for concept development through active participation in science instruction. All students, in all grades, have a right to and are entitled to receive continuous science instruction.

PROGRAM GOALS

1. Understand the nature of science.
2. Become proficient in using science process skills to solve problems and make decisions.
3. Develop skills to manipulate and/or operate science equipment.
4. Develop responsible attitudes toward the environment, science, technology, and society.
5. Understand basic scientific concepts and principles.

The program goals are the basis for the total framework of the science curriculum and are composed of (1) the nature of science, (2) process skills, (3) manipulative skills, (4) attitudes toward science, and (5) concepts. These permeate the curriculum and are the source of all science objectives K-12. Careful attention should always be given to them when program development, instructional planning, and/or evaluation are being done.

I. Nature of Science

Science operates on an accepted set of assumptions. Science is first and foremost a human enterprise. Its methods and concepts evolve as the scientific community evolves and grows. Science is an integral part of society. The nature of science is as important to the science curriculum as science content and process skills. Without it, the science curriculum has no relevance. A scientifically literate person understands the following about the nature of science:

A. Science is public.
B. Science is historic.
C. Science is replicable.
D. Science is tentative.
E. Science is probabilistic.

Scientific knowledge is accessible to **public** inspection. Most scientific knowledge is available through more than 70,000 scientific journals and publications. Significant breakthroughs are highlighted to the general public through the media, including newspapers, television, radio, and electronic networks.

Gains in scientific understanding represent a progression through previous events. This **historical** aspect is important in contributing to new knowledge and expanding current concepts. Students need to be exposed to significant historical events to appreciate scientific roots. For example, a scientifically literate student should have an understanding and appreciation of the evolving model of the atom.

Scientific discoveries are not singular events. Validity is confirmed and established by the process of conducting like or similar experiments and obtaining supporting results. A recent example is the discovery of "cold fusion." The nation and world was excited with initial news of the process of obtaining nuclear energy in a test tube by a relatively simple process. This excitement was short-lived when other scientists around the world could not **replicate** the experiment.

Scientific knowledge is constantly evolving and is tentative. All scientific knowledge is subject to change as new information is made public. Individuals with scientific mind-sets view science as tentative truths and modify their position as new evidence demands. All students need to understand the **tentative** nature of scientific knowledge, that science is not an absolute body of truths and is subject to change.

Interpretation of scientific experiments to show cause and effect is based on mathematical models. The significance of experimental data is interpreted through statistical models and the application of the laws of probability. A scientific confirmation is only tentative in that there is always an accepted **probability** the results could have occurred by chance

II. Process Skills

Science process skills are the foundation for inquiry in science. These skills are acquired through active experiential learning. The process skills support the development of reasoning and problem-solving abilities and are the core of scientific methodologies.

A. Observing
B. Classifying
C. Using numbers
D. Communicating
E. Measuring
F. Inferring
G. Predicting
H. Using space/time relations
I. Interpreting data
J. Defining operationally
K. Experimenting
L. Controlling variables
M. Formulating hypotheses
N. Formulating models

Process Skills Defined:

All of the science process skills are necessary to find solutions to scientific or other problems. There are two types of process skills, basic and integrated. The basic skills provide the intellectual groundwork in this problem-solving endeavor. The integrated skills serve as the immediate tools for solving a problem. For example, the basic skill of observing is needed as observations (data) are collected when solving a problem. The interpretation of these observations (data) is a different skill—an integrated skill. Naturally, people must make good observations before they can interpret these observations. Thus, the basic process skills are prerequisite to the integrated skills. The integrated processes are the terminal skills needed to do science experiments or to solve problems. These integrated skills consist of identifying variables, constructing tables of data and graphs, describing relationships between variables, acquiring and processing data, analyzing investigations, constructing hypotheses, operationally defining variables, designing investigations, and experimenting.

Basic Process Skills

A. **Observing** involves using one or more of the senses in perceiving properties or similarities and differences in objects and events. Observations can be made directly with the senses or indirectly through the use of simple or complex instruments. Observations are influenced by the previous experience of the observer.

B. **Classifying** involves the sorting or ordering of objects according to their properties or similarities and differences. Classification is based on observational relationships which exist between objects or events.

C. **Using numbers** is a means of quantifying variables, measurements, and/or comparisons. Numbers are needed to manipulate measurements and to order and classify objects.

D. **Communicating** involves the transmission of observable data. Examples of communication media are spoken or written words, graphs, drawings, diagrams, maps, and mathematical equations. Such skills as asking questions, discussing, explaining, reporting, and outlining can aid the development of communication skills.

E. **Measuring** is the ordering of things by magnitude, such as area, length, volume, and mass. Measuring helps quantify observations. The process can involve the use of instruments and the skills needed to effectively use them.

F. **Inferring** involves the use of logic to make conclusions from observations. Inferring suggests explanations, reasons, or causes for events. Inferences are based on judgments and are not always valid.

G. **Predicting** involves suggesting what will occur in the future. Predictions are based on observations, measurements, and inferences about relationships between or among observed variables. Prediction is speculation of what will happen based on past experiences. Accuracy of a prediction is closely affected by the accuracy of the observation.

H. **Using space/time relations** means describing the spatial relationships of objects and their change with time. Examples of this process skill are motion, direction and spatial arrangement, symmetry, and shape.

Integrated Process Skills

I. **Interpreting data** is a complex skill involving many of the other process skills. It involves making predictions, inferences, and hypotheses from a set of data. Interpretations may need revision when additional data are obtained.

J. **Defining operationally** is stating definitions in working terms. Such definitions limit the meaning of a term to "what is done" and "what is observed." Example of a working definition: A dry cell, when properly connected with two wires and a light bulb, will cause the bulb to glow.

K. **Experimenting** involves testing a hypothesis under controlled conditions in which variables are limited. Experimenting is basic to the total scientific process and uses all of the other process skills.

L. **Controlling variables** is the managing of the conditions or factors in an experiment. Unless the variables of an experiment can be carefully regulated, the results of the experiment are not reliable.

M. **Formulating hypotheses** involves forming a generalization question based on observations. The hypothesis is a problem to be solved by using other process skills, especially experimenting. Questions, inferences, and predictions can lead to the formation of a hypothesis. The hypothesis must be tested if its credibility is to be established.

N. **Formulating models** is a useful way of describing and explaining interrelationships of ideas. A model can be a mental, physical, or verbal representation of an idea. Models represent what we know about an idea or concept and are constantly changing as new data are obtained.

III. Manipulative Skills

The scientific enterprise is a partnership between knowledge and process. An essential part of the process is experimentation requiring the use of manipulative skills. An effective science program provides ample opportunities for students to:

A. employ safe laboratory/manipulative procedures

B. choose, construct, and/or assemble equipment appropriate for investigating

C. manipulate scientific materials and equipment including computers, software, and interfacing devices

D. properly care for scientific equipment and materials

E. properly handle and care for living organisms.

With increasing emphasis on experiential learning at the state and national levels, it is imperative to teach students to employ appropriate safety practices when engaging in any science activity. All learning activities in the school environment impose an element of risk. The primary purpose of safety instruction is to reduce the risk by lowering the frequency of accidents and the seriousness of injury. It is recognized, from school accident reports, that the science classroom/laboratory is one of the safest places in the school environment.

Teachers must be aware of safety recommendations, regulations, and laws relating to such topics as eye safety, use of chemicals, field trips, and use of living organisms. When students and teachers are properly informed about safe ways of doing science, teacher concerns should not be an excuse or deterrent to engaging students in meaningful learning activities.

(Current safety advice and procedures are addressed in the Department of Public Instruction's safety manual, *Safety First In Science Teaching*. More information is available by contacting a science consultant in the Department of Public Instruction.)

IV. Attitudes Toward Science

Attitudes strongly influence behavior, and in a technological world, it is important that students have positive views of science and its contributions to society. An effective experiential science program significantly influences the development of positive attitudes toward:

A. the learning and experiencing of science

B. the need for conservation, preservation, and wise use of natural resources

C. the use of scientific inquiry as a way of thinking and problem solving

D. the importance of understanding the contribution of science and technology in shaping society.

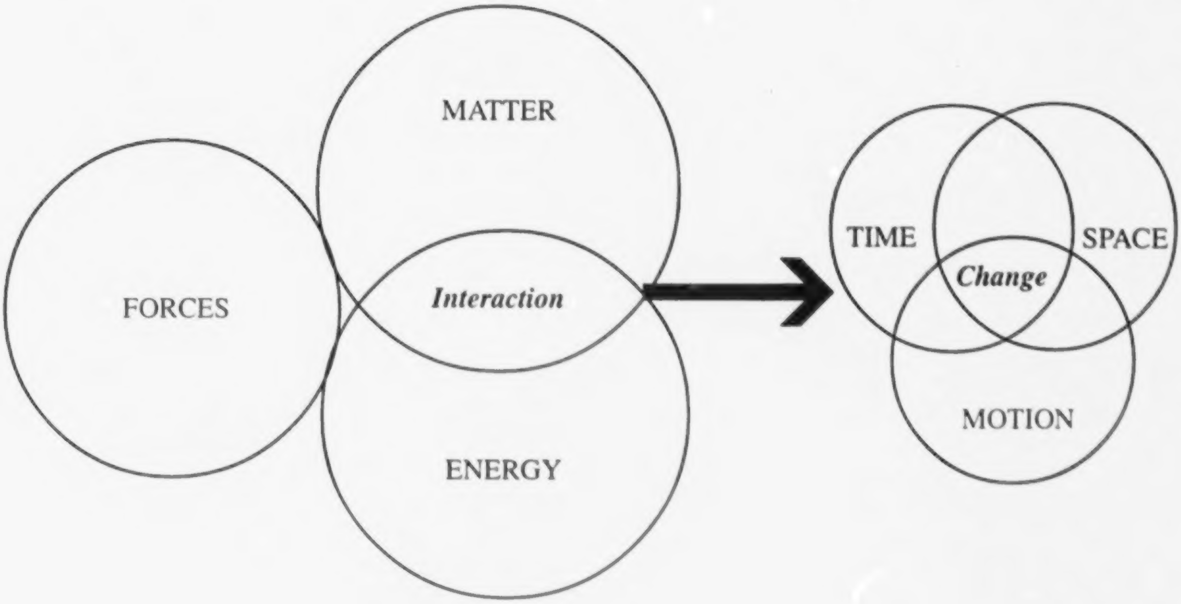
Student attitudes toward science are recognized as important indicators of how students view engaging in science. Student attitudes will not be a part of an achievement score. However, attitudes can be measured. Attitudinal research continues to expand in acceptance. Societal attitudes are constantly being assessed in public opinion polls. Presidential races are largely won or lost based on public attitudes toward the candidates (whether we like or dislike them) and not for the facts, pro and con, associated with candidates.

An attitude is defined as a tendency to respond positively or negatively to an idea, object, or person. Research shows student attitudes toward science are positive in the early elementary school years and become less positive as they progress through middle and secondary years. How students perceive science and their ability to succeed in science are influenced, to a large extent, by the way they experience science instruction. Traditional teaching strategies have been recognized as a factor related to why many students learn to dislike science.

Attitudes toward science constitute one of the five major PROGRAM GOALS in the *Standard Course of Study*. **It is not intended that attitudes be taught directly by the teacher.** Students form their own likes and dislikes for a subject from their experiences. Student attitudes toward science have been a part of the National Assessment of Educational Progress for many years. North Carolina will measure how students view science. This measurement will not affect End-of-Course or End-of-Grade test scores, but should serve teachers, administrators, and the state as one indicator of the status of scientific literacy.

V. Science Concepts

Three general divisions of science concepts are earth, life, and physical. There are numerous unifying concepts in science. These concepts permeate all that is studied in science, including facts, principles, laws, and theories. A fundamental classification of unifying concepts is that everything exists as MATTER or ENERGY. The interaction of MATTER and ENERGY through FORCES causes change within systems through MOTION, TIME, and SPACE. As students progress through the science curriculum hierarchy, their understanding of these unifying concepts is expanded. These concepts are addressed through the curriculum in the goals and objectives.



The unifying concepts of the three general divisions of earth, life, and physical science concepts are:

A. Earth/Environmental Science Concepts

- E1. The sun is the primary source of energy for the earth's surface.
- E2. The earth's atmosphere, biosphere, hydrosphere, and lithosphere are always changing and interacting.
- E3. The sun/earth/moon interactions produce various effects including cyclic changes.
- E4. The earth's history is revealed through various means, including rock and fossils.
- E5. Universal forces affect the solar system, stars, and galaxies.

B. Life Science Concepts

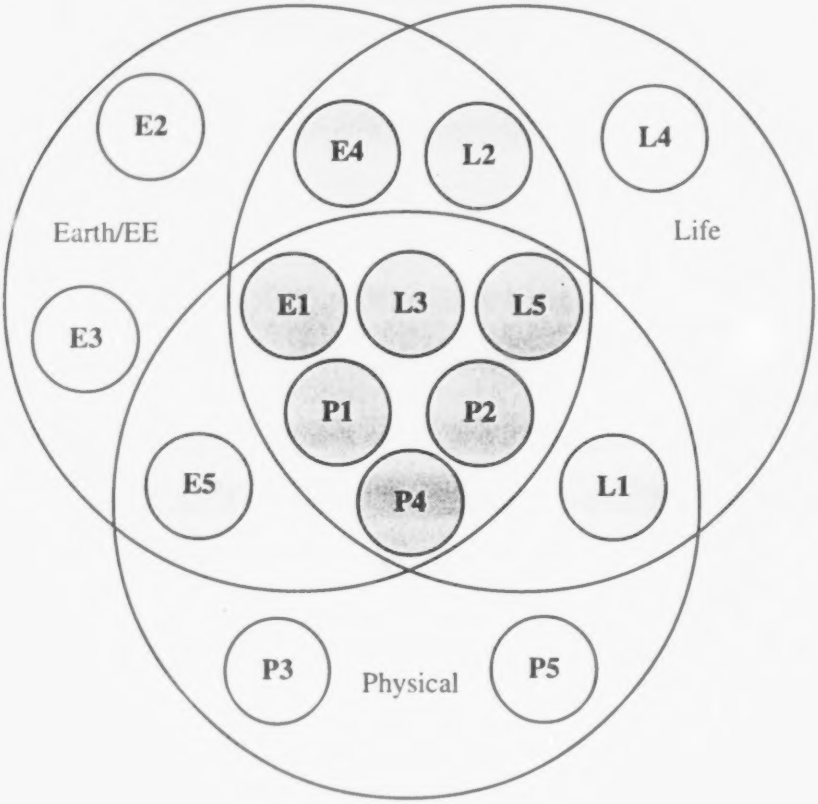
- L1. The basic unit of living things is the cell.
- L2. Living things evolve and are a product of heredity and environment.
- L3. Living things grow, develop, reproduce, and die.
- L4. Living things exhibit basic similarities and differences.
- L5. Living things exist in a state of interdependence.

C. Physical Science Concepts

- P1. All elemental matter is composed of atoms.
- P2. Energy and matter interact to produce changes.
- P3. Matter and energy can be converted from one form to another.
- P4. Universal forces (gravitational, magnetic, electrical, and nuclear) affect all objects.
- P5. Matter and energy are conserved.

National and state educational goals recognize the need for integration between and within subjects in order to increase relevance and promote understanding and reasoning skills in students. Science, from the earliest years to the culmination of the high school experience, should be presented through reasonable degrees of integrated learning.

It is important to understand that the grade level/subject area goals and objectives are not presented in any specific order. It is the responsibility of instructional personnel to determine grade level/subject area scope and sequence and the degree of integration between and within subjects. There are an infinite number of ways for this integration to occur. The following model is one way to show a reasonable degree of integration.



PROGRAM OVERVIEW

The science curriculum is offered through the study of the nature of science, process and manipulative skills, and scientific concepts and principles in the areas of earth, life, and physical science. Energy, environmental concerns, and recent advances in science and technology permeate the curriculum. Students gain a greater understanding of the program goals of science as they progress through the K-12 curriculum.

The child's first experiences with science, from the earliest grades, are based on experiential learning. Use is made of all the senses in developing such skills as observing, measuring, classifying, using numbers, and communicating. The five program goals are kept in the forefront during all phases of planning, instructing, and evaluating. To help assure success, learning experiences must be developmentally appropriate. An experiential, inquiry-based, instructional program is essential for student understanding of science at all levels. In this way, science program goals are achievable by all students and provide each student with a rewarding experience and a sense of accomplishment.

This curriculum is designed for maximum flexibility at the local school system level. There are many excellent science curriculum programs with national validation and recognition that reflect the philosophy expressed in this document and offer an alternative approach to the traditional science program.

The most important place for the use of good and varied assessment is on a regular basis at the classroom level. Ongoing classroom assessment in science should reflect the philosophy of the curriculum. The singular use of traditional assessment techniques is not appropriate for this curriculum. Teacher observations of student performance, portfolios, open-response formats, and objective formats are all appropriate. Classroom assessment should emphasize high level understanding.

The *Standard Course of* Study and the science curriculum are designed to foster reasoning, thinking, and problem solving skills. The philosophy and program goals strongly contribute to this expectation. The level of reasoning can be raised through experiential instructional strategies that increase in-depth understanding of science concepts.

Elementary (K-5)

Elementary science is a vital component of the elementary curriculum and is taught regularly throughout the year. Content areas of earth, life, and physical sciences should be presented in an integrated fashion. Because young children are naturally curious and are excited about participating in experiential learning, science offers a stimulus for the integration of all content areas. Developmentally appropriate science instruction at the earliest years provides essential readiness skills supporting other curriculum areas and contributes to thinking and reasoning processes.

The emphasis in kindergarten centers on readiness skills that help refine and develop the child's sensory mechanisms. Readiness skills and science knowledge may well be attained through experiences encompassing an integration of various content areas. Subject matter studied through the "hands-on" experiences of children relates to their past experiences and present environment. Science concepts and process skills are acquired as children learn to observe, describe, and discriminate among objects and organisms. The student is given the opportunity to observe and experience the properties of matter such as color, size, shape, texture, smell, and weight and to work with plants, animals, and numbers.

As children progress beyond kindergarten, they are ready for more formal science experiences. The program provides opportunities for concrete, manipulative experiences which give broad coverage to science and allows students to experience more abstract concepts. These experiences assist the child in developing a basic understanding of the conceptual themes of matter, energy, motion, time, space, and forces.

With young children, understanding the processes of science is more important than knowing the content of science. Through activities using science processes, students gain a basic understanding of science content. The development of problem-solving and reasoning skills is an essential part of the learning process. Inquiry methods deal with real problems that are relevant to the student.

Grade K Outline

1. **Nature of Science**
    - 1.1 Public

2. **Process Skills**
    - 2.1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict

3. **Manipulative Skills**
    - 3.1 Safety
    - 3.2 Choose equipment
    - 3.3 Use equipment
    - 3.4 Care for equipment
    - 3.5 Care for living organisms

4. **Attitudes Toward Science**
    - 4.1 Learning and experiencing science
    - 4.2 Natural resources

5. **Student and His/Her World**
    - 5.1 Self-awareness
    - 5.2 Use of senses
    - 5.3 Interaction with the environment

Grade 1 Outline

1. **Nature of Science**
    - 1. 1 Public

2. **Process Skills**
    - 2.1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict

3. **Manipulative Skills**
    - 3.1 Safety
    - 3.2 Choose equipment
    - 3.3 Use equipment
    - 3.4 Care for equipment
    - 3.5 Care for living organisms

4. **Attitudes Toward Science**
    - 4.1 Learning and experiencing science
    - 4.2 Natural resources

5. **Living and Non living Objects**
    - 5.1 Needs of living organisms
    - 5.2 Material objects
    - 5.3 Safety

Grade 2 Outline

1. **Nature of Science**
    - 1.1 Public
    - 1.2 Historic
    - 1.3 Replicable

2. **Process Skills**
    - 2.1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict
    - 2.8 Use space-time relations
    - 2.9 Interpret data
    - 2.10 Define operations
    - 2.11 Experiment

3. **Manipulative Skills**
    - 3.1 Safety
    - 3.2 Choose and assemble equipment
    - 3.3 Use science equipment and materials
    - 3.4 Care for equipment and materials
    - 3.5 Handle and care for organisms

4. **Attitudes Toward Science**
    - 4.1 Learning and experiencing science
    - 4.2 Natural resources
    - 4.3 Scientific inquiry

5. **Changes Within the World**
    - 5.1 Life cycles
    - 5.2 Environmental adaptations
    - 5.3 Matter
    - 5.4 Weather and related cycles
    - 5.5 Prehistoric life

Grade 3 Outline

1. **Nature of Science**
    - 1.1 Public
    - 1.2 Historic
    - 1.3 Replicable
    - 1.4 Tentative
    - 1.5 Probabilistic

2. **Process Skills**
    - 2. 1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict
    - 2.8 Use space-time relations
    - 2.9 Interpret data
    - 2.10 Define operations
    - 2.11 Experiment
    - 2.12 Control variables
    - 2.13 Formulate hypotheses
    - 2 14 Formulate models

3. **Manipulative Skills**
    - 3.1 Safety
    - 3.2 Choose, construct, assemble equipment
    - 3.3 Use materials and equipment
    - 3.4 Care for equipment and materials
    - 3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
    - 4.1 Learning and experiencing science
    - 4.2 Natural resources
    - 4.3 Scientific inquiry

5. **Patterns and Systems**
    - 5.1 Interdependence of plants and animals
    - 5.2 Earth cycles
    - 5.3 Rocks and soil
    - 5.4 Energy systems
    - 5.5 Solutions and mixtures
    - 5.6 Nutritional patterns

Grade 4 Outline

1. **Nature of Science**
    - 1.1 Public
    - 1.2 Historic
    - 1.3 Replicable
    - 1.4 Tentative
    - 1.5 Probabilistic

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2. **Process Skills**
   - 2.1 Observe
   - 2.2 Classify
   - 2.3 Use numbers
   - 2.4 Communicate
   - 2.5 Measure
   - 2.6 Infer
   - 2.7 Predict
   - 2.8 Use space-time relations
   - 2.9 Interpret data
   - 2.10 Define operations
   - 2.11 Experiment
   - 2.12 Control variables
   - 2.13 Formulate hypotheses
   - 2.14 Formulate models

3. **Manipulative Skills**
   - 3.1 Safety
   - 3.2 Choose, construct, assemble equipment
   - 3.3 Use materials and equipment
   - 3.4 Care for equipment and materials
   - 3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
   - 4.1 Learning and experiencing science
   - 4.2 Natural resources
   - 4.3 Scientific inquiry
   - 4.4 Science, technology, society

5. **Analyzing Systems**
   - 5.1 Animal groupings
   - 5.2 Animal behavior
   - 5.3 Solar systems
   - 5.4 Interaction of matter and energy
   - 5.5 Heat energy transfer
   - 5.6 Simple machines
   - 5.7 Chemical substances and the body

Grade 5 Outline

1. **Nature of Science**
   - 1.1 Public
   - 1.2 Historic
   - 1.3 Replicable
   - 1.4 Tentative
   - 1.5 Probabilistic

2. **Process Skills**
   - 2.1 Observe
   - 2.2 Classify
   - 2.3 Use numbers
   - 2.4 Communicate

2.5 Measure
2.6 Infer
2.7 Predict
2.8 Use space-time relations
2.9 Interpret data
2.10 Define operations
2.11 Experiment
2.12 Control variables
2.13 Formulate hypotheses
2.14 Formulate models

3. **Manipulative Skills**
    3.1 Safety
    3.2 Choose, construct, assemble equipment
    3.3 Use materials and equipment
    3.4 Care for equipment and materials
    3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
    4.1 Learning and experiencing science
    4.2 Natural resources
    4.3 Scientific inquiry
    4.4 Science, technology, society

5. **Energy Concepts**
    5.1 Plant communities
    5.2 Sources and forms of energy
    5.3 Natural resource preservation
    5.4 Wise use of natural resources
    5.5 Earth over time
    5.6 Weather and climate
    5.7 Physical fitness energy

Middle Level (6-8)

Science is constantly seeking new knowledge and opens its explanation to continual screening and modification. Science is a subject in tune with adolescence; it can provide the central theme around which a middle level curricula spirals. It is a discipline which reflects both the adolescent's need to understand self and the urge to reach beyond self to understand and control his or her world.

The middle level science curriculum integrates earth, life, and physical science. Instructional time and depth of content increase. Science concepts and principles, presented from a student-centered perspective, place emphasis on the nature of science and inquiry. Instruction is largely experiential, stressing scientific methods through application of process skills: controlling variables, formulating hypotheses, interpreting data, and designing experiments. Problem-solving and reasoning experiences are essential in the learning process. Scientific inquiry deals with both academic and real-world problems. Personal needs, societal issues, and academic and career preparation are interwoven into the course content. Appropriate science instruction assists middle level students in the transition from concrete reasoning processes to abstract reasoning patterns.

Grade 6 Outline

1. **Nature of Science**
    - 1.1 Public
    - 1.2 Historic
    - 1.3 Replicable
    - 1.4 Tentative
    - 1.5 Probabilistic

2. **Process Skills**
    - 2.1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict
    - 2.8 Use space-time relations
    - 2.9 Interpret data
    - 2.10 Define operations
    - 2.11 Experiment
    - 2.12 Control variables
    - 2.13 Formulate hypotheses
    - 2.14 Formulate models

3. **Manipulative Skills**
    - 3.1 Safety
    - 3.2 Choose, construct, assemble equipment
    - 3.3 Use materials and equipment
    - 3.4 Care for equipment and materials
    - 3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
    - 4.1 Learning and experiencing science
    - 4.2 Natural resources
    - 4.3 Scientific inquiry
    - 4.4 Science, technology, society

5. **Current Topics**
    - 5.1 Societal, technological, and environmental issues
    - 5.2 Research in science
    - 5.3 Careers in science and technology

6. **Patterns and Cycles in the Natural World**
    - 6.1 Similarities and differences of living organisms
    - 6.2 Growth patterns
    - 6.3 Populations, communities, and ecosystems
    - 6.4 Heat, light, sound
    - 6.5 Rock cycle
    - 6.6 Interactions of sun, earth, moon, and planets

Grade 7 Outline

1. **Nature of Science**
   - 1.1 Public
   - 1.2 Historic
   - 1.3 Replicable
   - 1.4 Tentative
   - 1.5 Probabilistic

2. **Process Skills**
   - 2.1 Observe
   - 2.2 Classify
   - 2.3 Use numbers
   - 2.4 Communicate
   - 2.5 Measure
   - 2.6 Infer
   - 2.7 Predict
   - 2.8 Use space-time relations
   - 2.9 Interpret data
   - 2.10 Define operations
   - 2.11 Experiment
   - 2.12 Control variables
   - 2.13 Formulate hypotheses
   - 2.14 Formulate models

3. **Manipulative Skills**
   - 3.1 Safety
   - 3.2 Choose, construct, assemble equipment
   - 3.3 Use materials and equipment
   - 3.4 Care for equipment and materials
   - 3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
   - 4.1 Learning and experiencing science
   - 4.2 Natural resources
   - 4.3 Scientific inquiry
   - 4.4 Science, technology, society

5. **Current Topics**
   - 5.1 Societal, technological, and environmental issues
   - 5.2 Research in science
   - 5.3 Careers in science and technology

6. **Systems and Diversity**
   - 6.1 Matter
   - 6.2 Weather
   - 6.3 Motion
   - 6.4 Energy transformation
   - 6.5 Cell processes
   - 6.6 Systems of organisms
   - 6.7 Inheritance
   - 6.8 Human effects on ecosystems

Grade 8 Outline

1. **Nature of Science**
   1.1 Public
   1.2 Historic
   1.3 Replicable
   1.4 Tentative
   1.5 Probabilistic

2. **Process Skills**
   2.1 Observe
   2.2 Classify
   2.3 Use numbers
   2.4 Communicate
   2.5 Measure
   2.6 Infer
   2.7 Predict
   2.8 Use space-time relations
   2.9 Interpret data
   2.10 Define operations
   2.11 Experiment
   2.12 Control variables
   2.13 Formulate hypotheses
   2.14 Formulate models

3. **Manipulative Skills**
   3.1 Safety
   3.2 Choose, construct, assemble equipment
   3.3 Use materials and equipment
   3.4 Care for equipment and materials
   3.5 Handle and care for living organisms

4. **Attitudes Toward Science**
   4.1 Learning and experiencing science
   4.2 Natural resources
   4.3 Scientific inquiry
   4.4 Science, technology, society

5. **Current Topics**
   5.1 Societal, technological, and environmental issues
   5.2 Research in science
   5.3 Careers in science and technology

6. **Change Within Systems**
   6.1 Landforms through geologic time
   6.2 Conservation of matter
   6.3 Electricity and magnetism
   6.4 Gravity
   6.5 Energy and the environment
   6.6 People and the environment
   6.7 Adaptation and evolution

High School (9-12)

The high school science curriculum becomes more specific and theoretical. There is a continuation of concept development with emphasis on the nature of science and scientific inquiry. The high school program places emphasis on both applied and theoretical aspects of science. Courses stress doing science through the use of manipulatives and laboratory work, presenting science as a practical and relevant subject. The basic philosophy reflects an attitude that science is understandable and is a process of finding out about the universe. Courses are challenging and reflect a philosophy of science as inquiry. All students benefit from a program which has high expectations. Emphasis is on using current technology as students investigate relevant problems. Concept acquisition emphasizes recent developments in science and technology and addresses socially relevant issues.

The Basic Education Program requires that all high schools offer five science courses: biology, chemistry, earth science, physical science, and physics. With the graduating Class of 1996, three units of science are required for graduation. One unit must be biology, and an additional unit must be a physical science. The physical science requirement may be met by courses including chemistry, physics, earth science, and physical science. Other advanced and enrichment physical sciences may also apply. A well-balanced, three-year science program includes course work in earth, life, and physical sciences.

Advanced, applied, and enrichment courses should be determined by the particular needs and interests of students and may include advanced biology, advanced chemistry, advanced earth science, applied and technological sciences, advanced physics, genetics, astronomy, and biotechnology.

Biology Outline

1. **Nature of Science**
   - 1.1 Public
   - 1.2 Historic
   - 1.3 Replicable
   - 1.4 Tentative
   - 1.5 Probabilistic

2. **Process Skills**
   - 2.1 Observe
   - 2.2 Classify
   - 2.3 Use numbers
   - 2.4 Communicate
   - 2.5 Measure
   - 2.6 Infer
   - 2.7 Predict
   - 2.8 Use space-time relations
   - 2.9 Interpret data
   - 2.10 Define operations
   - 2.11 Experiment
   - 2.12 Control variables
   - 2.13 Formulate hypotheses
   - 2.14 Formulate models

3. **Manipulative Skills**
   - 3.1 Safety
   - 3.2 Choose, construct, assemble equipment

3.3 Use materials and equipment
3.4 Care for equipment and materials
3.5 Handle and care for living organisms

4. Attitudes Toward Science
4.1 Learning and experiencing science
4.2 Natural resources
4.3 Scientific inquiry
4.4 Science, technology, society

5. Current Topics
5.1 Societal, technological, and environmental issues
5.2 Research in biology
5.3 Careers in biology

6. Chemical and Physical Basis of Life
6.1 Living and non living
6.2 Cell structure
6.3 Chemical processes of life
6.4 Dynamic equilibrium
6.5 Anatomy and physiology

7. Continuity of Life
7.1 Inheritance
7.2 Chemical heredity
7.3 Organic variation
7.4 Human origin and development
7.5 Diversity and classification of living things
7.6 Genetic and environmental health factors

8. Ecology
8.1 Populations, communities, and ecosystems
8.2 Human influences on the environment
8.3 Plant and animal behavior

Chemistry Outline

1. Nature of Science
1.1 Public
1.2 Historic
1.3 Replicable
1.4 Tentative
1.5 Probabilistic

2. Process Skills
2.1 Observe
2.2 Classify
2.3 Use numbers
2.4 Communicate
2.5 Measure
2.6 Infer
2.7 Predict

- 2.8 Use space-time relations
- 2.9 Interpret data
- 2.10 Define operations
- 2.11 Experiment
- 2.12 Control variables
- 2.13 Formulate hypotheses
- 2.14 Formulate models

3. Manipulative Skills
- 3.1 Safety
- 3.2 Choose, construct, assemble equipment
- 3.3 Use materials and equipment
- 3.4 Care for equipment and materials

4. Attitudes Toward Science
- 4.1 Learning and experiencing science
- 4.2 Natural resources
- 4.3 Scientific inquiry
- 4.4 Science, technology, society

5. Current Topics
- 5.1 Societal, technological, and environmental issues
- 5.2 Research in chemistry
- 5.3 Careers in chemistry

6. Properties of Solutions
- 6.1 Concentrations of solutions
- 6.2 Ionic and nonionic solutions
- 6.3 Solutes and solubilities

7. Regularities in Chemistry
- 7.1 Mole concept/stoichiometry
- 7.2 Periodic table/periodic law
- 7.3 Acid, bases, and pH
- 7.4 Chemical reactions
- 7.5 Gas laws

8. Changes in Chemistry
- 8.1 Reaction rate
- 8.2 Energy changes
- 9.0 Models in Chemistry
- 9.1 Atomic models

Earth Science Outline

1. Nature of Science
- 1.1 Public
- 1.2 Historic
- 1.3 Replicable
- 1.4 Tentative
- 1.5 Probabilistic

2. **Process Skills**
   2.1 Observe
   2.2 Classify
   2.3 Use numbers
   2.4 Communicate
   2.5 Measure
   2.6 Infer
   2.7 Predict
   2.8 Use space-time relations
   2.9 Interpret data
   2.10 Define operations
   2.11 Experiment
   2.12 Control variables
   2.13 Formulate hypotheses
   2.14 Formulate models

3. **Manipulative Skills**
   3.1 Safety
   3.2 Choose, construct, assemble equipment
   3.3 Use materials and equipment
   3.4 Care for equipment and materials

4. **Attitudes Toward Science**
   4.1 Learning and experiencing science
   4.2 Natural resources
   4.3 Scientific inquiry
   4.4 Science, technology, society

5. **Current Topics**
   5.1 Societal, technological, and environmental issues
   5.2 Research in earth science
   5.3 Careers in earth science

6. **Location and Mapping**
   6.1 Mapping skills

7. **Geology**
   7.1 Minerals and rocks
   7.2 Weathering and soil formation
   7.3 Landforms
   7.4 Plate tectonics
   7.5 History of earth

8. **Meteorology**
   8.1 Atmospheric structure
   8.2 Atmospheric circulation
   8.3 Weather patterns
   8.4 Severe weather patterns
   8.5 Climate

9. **Oceanography**
   9.1 Ocean and estuarine circulation
   9.2 Hydrologic cycle
   9.3 Shoreline processes
   9.4 Oceanic tides
   9.5 Ocean resources
   9.6 Marine communities

10. **Astronomy**
   10.1 Earth-moon-sun system
   10.2 Solar system
   10.3 Universe
   10.4 Space exploration

11. **Natural Resources and Environment**
   11.1 Interacting systems

Physical Science Outline

1. **Nature of Science**
   1.1 Public
   1.2 Historic
   1.3 Replicable
   1.4 Tentative
   1.5 Probabilistic

2. **Process Skills**
   2.1 Observe
   2.2 Classify
   2.3 Use numbers
   2.4 Communicate
   2.5 Measure
   2.6 Infer
   2.7 Predict
   2.8 Use space-time relations
   2.9 Interpret data
   2.10 Define operations
   2.11 Experiment
   2.12 Control variables
   2.13 Formulate hypotheses
   2.14 Formulate models

3. **Manipulative Skills**
   3.1 Safety
   3.2 Choose, construct, assemble equipment
   3.3 Use materials and equipment
   3.4 Care for equipment and materials

4. **Attitudes Toward Science**
   4.1 Learning and experiencing science
   4.2 Natural resources
   4.3 Scientific inquiry
   4.4 Science, technology, society

5. **Current Topics**
    - 5.1 Societal, technological, and environmental issues
    - 5.2 Research in the physical sciences
    - 5.3 Careers in the physical sciences

6. **Sound, Light, and Heat**
    - 6.1 Sound
    - 6.2 Light
    - 6.3 Heat

7. **Chemistry**
    - 7.1 Periodic table
    - 7.2 Chemical properties of elements
    - 7.3 Mixtures, compounds, elements
    - 7.4 Chemical reactions

8. **Mechanics**
    - 8.1 Work, energy, power
    - 8.2 Laws of motion
    - 8.3 Forces
    - 8.4 Fluids

9. **Electricity and Magnetism**
    - 9.1 Static electricity
    - 9.2 Magnetism
    - 9.3 Series and parallel circuits
    - 9.4 Electric current: measurement and control
    - 9.5 Electricity/magnetism relationship

10. **Energy**
    - 10.1 Conversion
    - 10.2 Conservation

Physics Outline

1. **Nature of Science**
    - 1.1 Public
    - 1.2 Historic
    - 1.3 Replicable
    - 1.4 Tentative
    - 1.5 Probabilistic

2. **Process Skills**
    - 2.1 Observe
    - 2.2 Classify
    - 2.3 Use numbers
    - 2.4 Communicate
    - 2.5 Measure
    - 2.6 Infer
    - 2.7 Predict
    - 2.8 Use space-time relations
    - 2.9 Interpret data
    - 2.10 Define operations
    - 2.11 Experiment

2.12 Control variables
2.13 Formulate hypotheses
2.14 Formulate models

3. **Manipulative Skills**
   3.1 Safety
   3.2 Choose, construct, assemble equipment
   3.3 Use materials and equipment
   3.4 Care for equipment and materials

4. **Attitudes Toward Science**
   4.1 Learning and experiencing science
   4.2 Natural resources
   4.3 Scientific inquiry
   4.4 Science, technology, society

5. **Current Topics**
   5.1 Societal, technological, and environmental issues
   5.2 Research in physics
   5.3 Careers in physics

6. **Basic Mechanics**
   6.1 Laws of motion
   6.2 Vector quantities and component forces
   6.3 Gravitational forces
   6.4 Mechanical energy
   6.5 Kinetic molecular theory

7. **Thermodynamics**
   7.1 Characteristics of heat and conservation of energy
   7.2 Heat equivalent of work

8. **Wave Motion**
   8.1 Properties and characteristics of waves
   8.2 Sound
   8.3 Light

9. **Electricity and magnetism**
   9.1 Electrostatic phenomena
   9.2 Direct current
   9.3 Magnetism, electricity

Characteristics

The K-12 Science Program

A. is designed for success by all students.

B. acknowledges that the degree and rate of achievement vary.

C. requires the offering of courses suitable to the varying needs and interests of all students.

D. stresses concept learning and process skills attainment through experiential science instruction.

E. stresses concept learning through current societal issues.

F. promotes responsible attitudes toward science, the environment, and technology.

G. encourages the use of technology in the instructional process.

H. offers flexibility for local curriculum development.

I. supports the use of multiple instructional materials such as experiential programs, textbooks, and multimedia.

J. requires a variety of assessment techniques including observation, portfolios, performance, open-ended, and objective.

Graphic Organizer

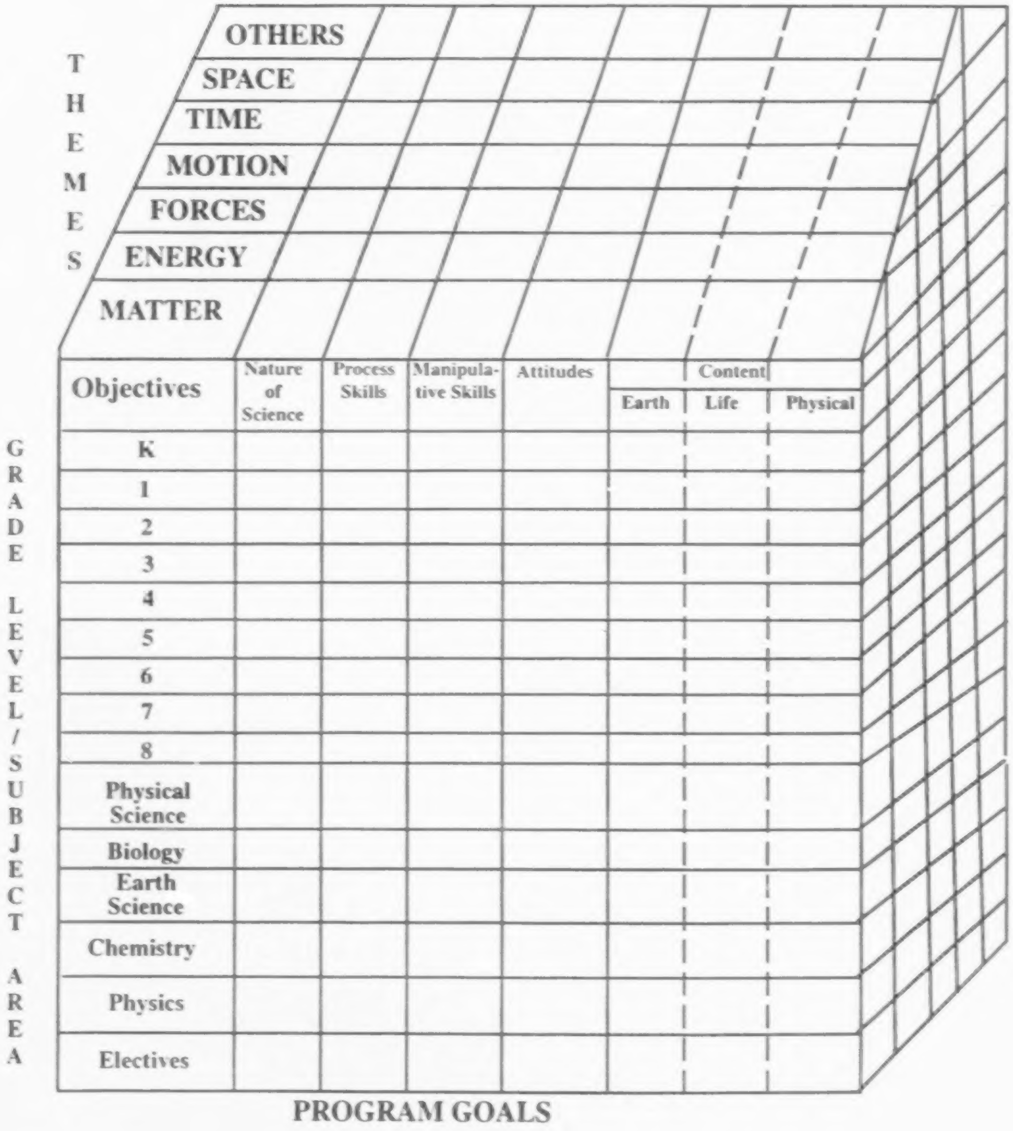
The K-12 science curriculum can be represented with a graphic organizer which illustrates the program goals, themes, and objectives. The graphic organizer can be replicated for each grade level or subject area. Expansion of the graphic organizer allows for additions to themes, program goal objectives, and subject area elective courses. It shows the integration of the science goals, objectives, and content themes. Each content objective requires the integration of all other program goals and themes. This integration is accomplished through well-designed instructional activities.

For example, at the third grade level, objective 5.4 addresses energy systems. In developing or identifying appropriate lessons to teach about energy systems, a teacher would determine which objectives under the other Program Goals: Nature of Science, Process Skills, and Manipulative Skills are integrated throughout the planned activities. In addition, the teacher needs to be aware of which major Concept Themes are addressed by the activities.

The primary lesson objective does not have to come from the content objectives as in the example. The primary lesson objective may instead relate to the Nature of Science, Process Skills, Manipulative Skills, or Content.

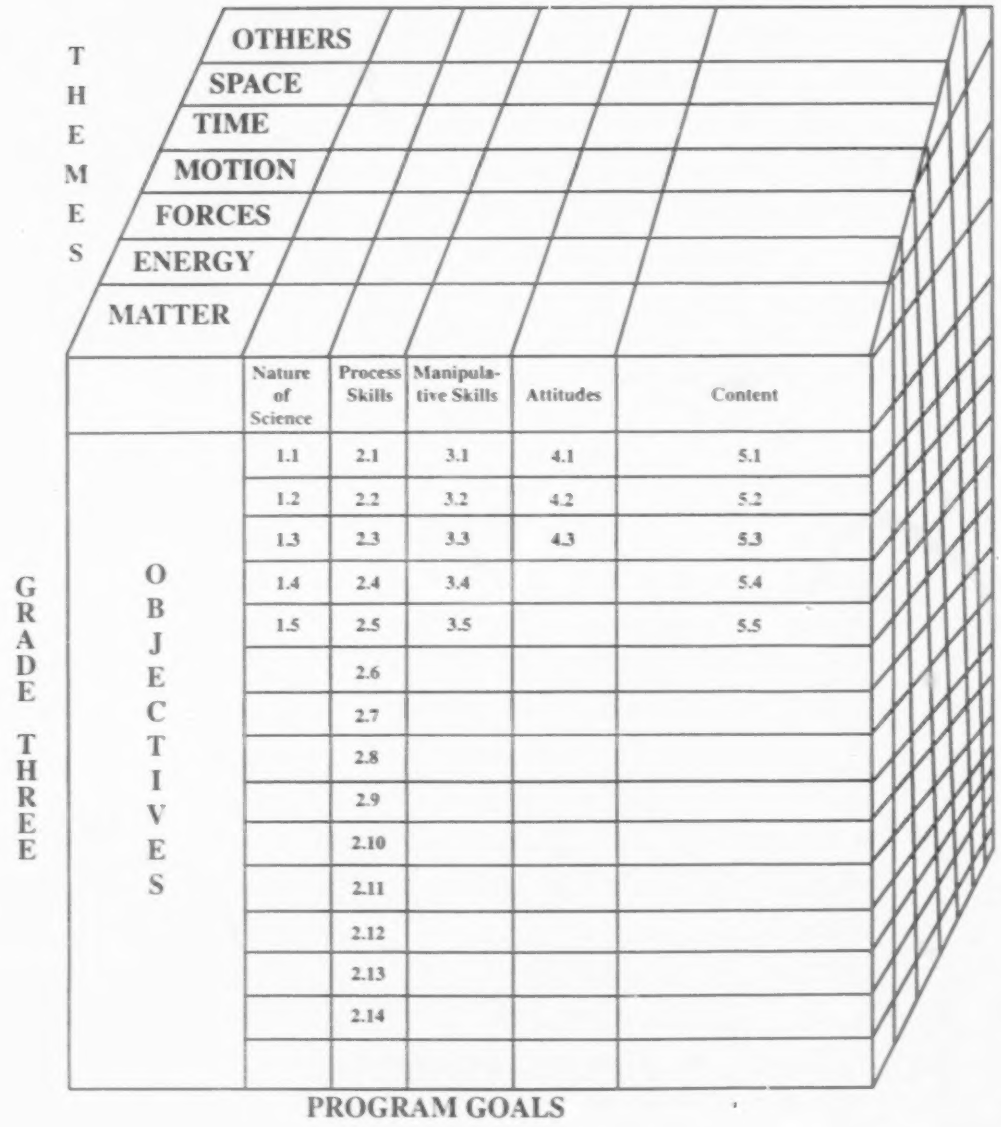
In situations where a teacher is using a developed program that does not align to a high degree with the stated content objectives, but does support the other program objectives, content correlation should be reviewed for compatibility over the year or several years of the instructional program.

STATE SCIENCE CURRICULUM
GRAPHIC ORGANIZER


THEMES
OTHERS
SPACE
TIME
MOTION
FORCES
ENERGY
MATTER
GRADE LEVEL / SUBJECT AREA
PROGRAM GOALS

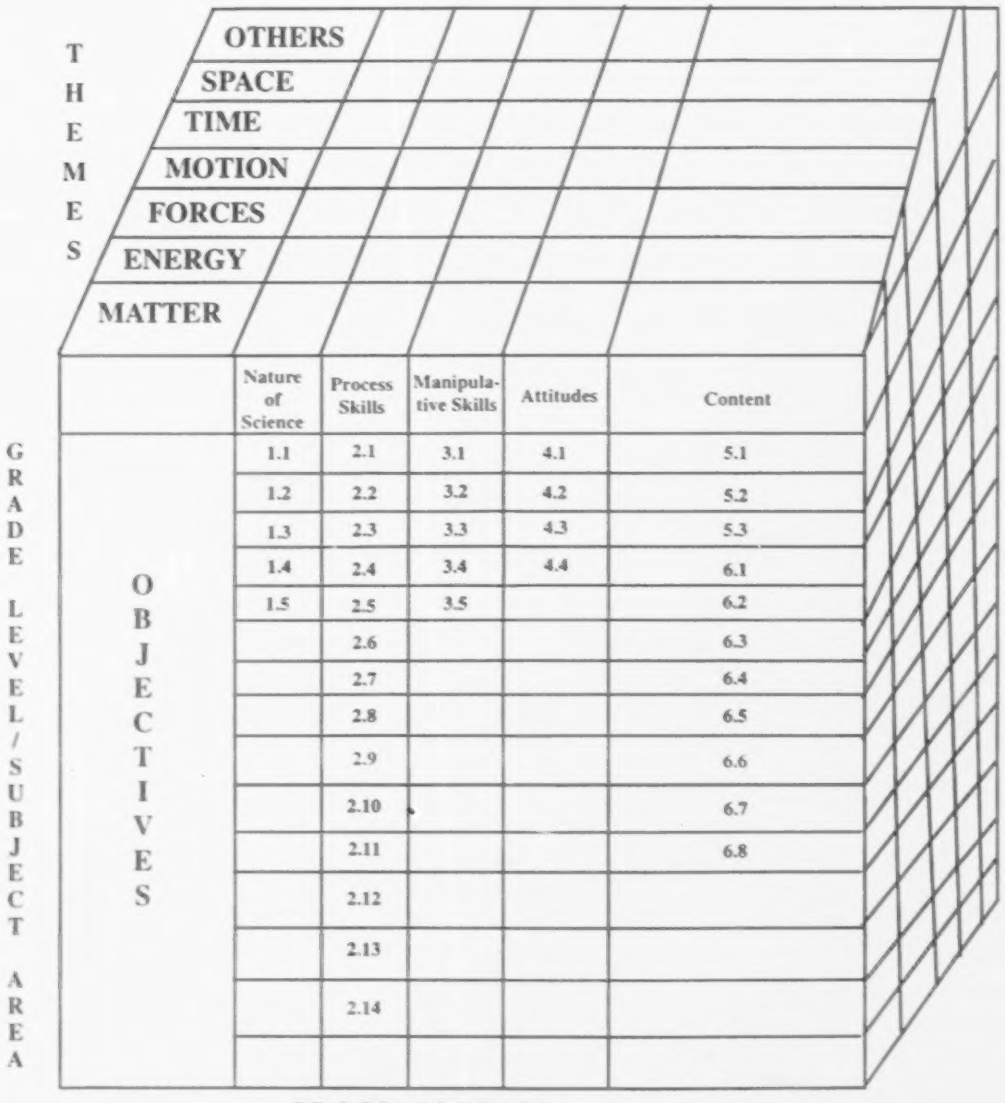
Objectives	Nature of Science	Process Skills	Manipulative Skills	Attitudes	Content		
					Earth	Life	Physical
K							
1							
2							
3							
4							
5							
6							
7							
8							
Physical Science							
Biology							
Earth Science							
Chemistry							
Physics							
Electives							

THIRD GRADE SCIENCE CURRICULUM
GRAPHIC ORGANIZER


THEMES
OTHERS
SPACE
TIME
MOTION
FORCES
ENERGY
MATTER
GRADE THREE
OBJECTIVES
PROGRAM GOALS

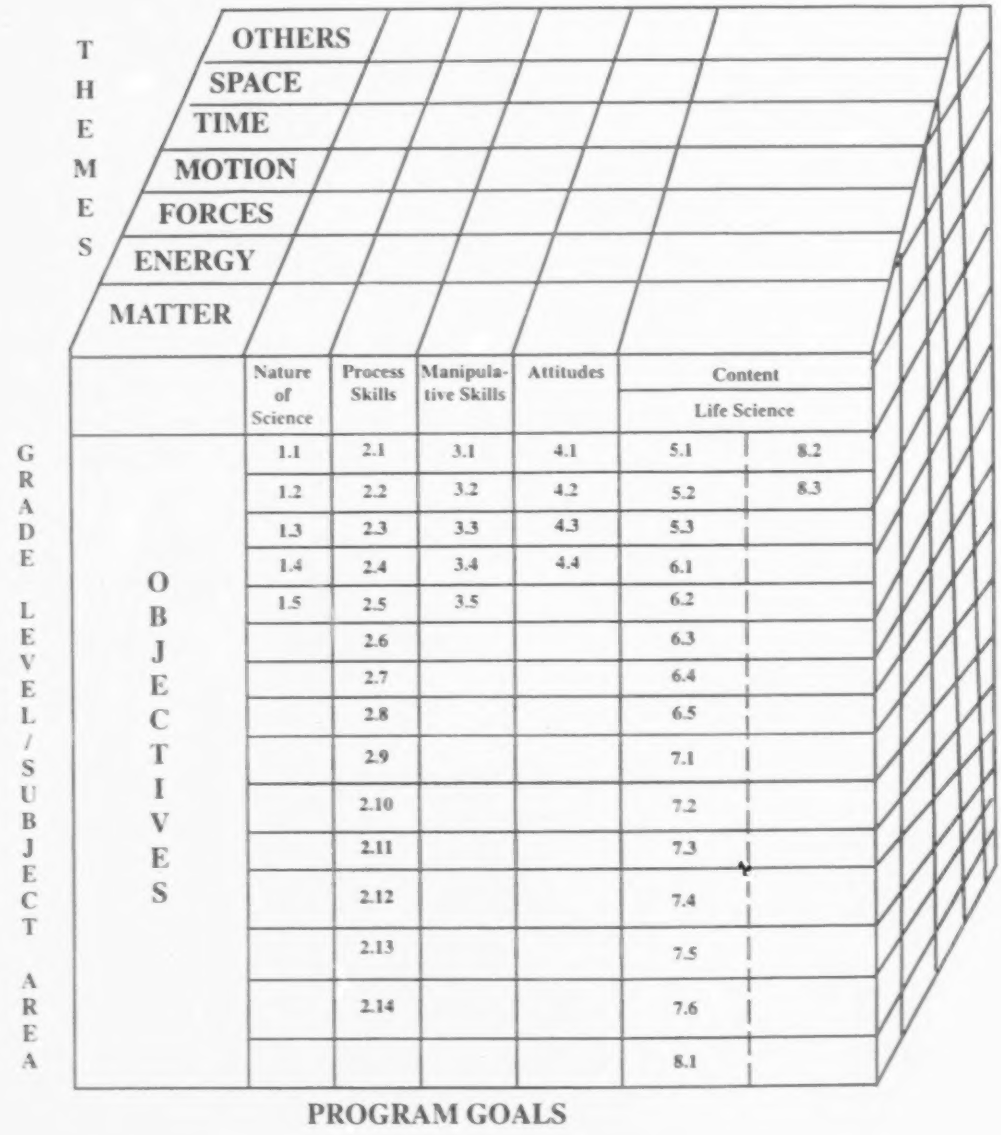
	Nature of Science	Process Skills	Manipulative Skills	Attitudes	Content
OBJECTIVES	1.1	2.1	3.1	4.1	5.1
	1.2	2.2	3.2	4.2	5.2
	1.3	2.3	3.3	4.3	5.3
	1.4	2.4	3.4		5.4
	1.5	2.5	3.5		5.5
		2.6			
		2.7			
		2.8			
		2.9			
		2.10			
		2.11			
		2.12			
		2.13			
		2.14			

SEVENTH GRADE SCIENCE CURRICULUM
GRAPHIC ORGANIZER


THEMES
OTHERS
SPACE
TIME
MOTION
FORCES
ENERGY
MATTER
GRADE LEVEL / SUBJECT AREA
PROGRAM GOALS

	Nature of Science	Process Skills	Manipulative Skills	Attitudes	Content
OBJECTIVES	1.1	2.1	3.1	4.1	5.1
	1.2	2.2	3.2	4.2	5.2
	1.3	2.3	3.3	4.3	5.3
	1.4	2.4	3.4	4.4	6.1
	1.5	2.5	3.5		6.2
		2.6			6.3
		2.7			6.4
		2.8			6.5
		2.9			6.6
		2.10			6.7
		2.11			6.8
		2.12			
		2.13			
		2.14			

BIOLOGY SCIENCE CURRICULUM
GRAPHIC ORGANIZER


THEMES
OTHERS
SPACE
TIME
MOTION
FORCES
ENERGY
MATTER
GRADE LEVEL / SUBJECT AREA
PROGRAM GOALS

	Nature of Science	Process Skills	Manipula-tive Skills	Attitudes	Content	
					Life Science	
OBJECTIVES	1.1	2.1	3.1	4.1	5.1	8.2
	1.2	2.2	3.2	4.2	5.2	8.3
	1.3	2.3	3.3	4.3	5.3	
	1.4	2.4	3.4	4.4	6.1	
	1.5	2.5	3.5		6.2	
		2.6			6.3	
		2.7			6.4	
		2.8			6.5	
		2.9			7.1	
		2.10			7.2	
		2.11			7.3	
		2.12			7.4	
		2.13			7.5	
		2.14			7.6	
					8.1	

APPENDIX A

Student Programs

Science Fairs

Science fairs are an exhibition of scientific projects prepared and presented by students under the guidance of their teachers and with the help of other persons interested in the science topic being explored. The cooperative efforts of teachers, students, parents, local experts, and judges strengthen the links between school and community resources. The opportunity is open to elementary, middle level, and high school students.

For more information contact Clinton (Jake) Brown, High School Team A, Department of Public Instruction, 301 North Wilmington Street, Raleigh, NC 27601-2825, (919)715-1853.

North Carolina Student Academy of Science

The North Carolina Student Academy of Science is an organization for students in grades 6-12 interested in science and scientific research. The Academy sponsors regional and state meetings where students learn about new research, have opportunities to share the results of their research, and compete for recognition and awards, including cash prizes and special trips.

For more information contact Myra Halpin, Executive Director, N.C. Student Academy of Science, N.C. School of Science and Mathematics, 1219 Broad Street, Durham, NC 27705, (919) 286-3366.

Science Olympiad

The Science Olympiad is a national, nonprofit organization and program devoted to improving the quality of science education, increasing student interest in science, and providing recognition for outstanding achievement in science education by both students and teachers. The goals are accomplished through classroom activities; training workshops; and the encouragement of intramural, district, regional, state, and national tournaments. The Science Olympiad tournaments are academic, interscholastic competitions, which consist of a series of individual and team events for which students prepare during the academic year. These challenging and motivational events are balanced between the scientific disciplines of astronomy, biology, chemistry, computer science, earth science, mathematics, and physics. There is a balance between events requiring knowledge of science itself and technological applications of science. The Science Olympiad has both middle level and high school level competitions. The emphasis is on learning, participation, interaction, having fun, and developing team spirit.

For more information contact Manley Midgett, N.C. Science and Mathematics Alliance, Suite 306, 410 Oberlin Road, Raleigh, NC 27605, (919) 733-9988.

North Carolina Envirothon Program

The Envirothon is a competition for five-member high school teams to compete in a natural resources knowledge and ecology field day against other high school teams. There are five stations where the teams will be given an exam on one of the following subjects: soils, forestry, wildlife, aquatics, and current environmental issues. The winning team represents North Carolina in the National Envirothon Competition.

For more information contact Steve Bennett, Suite 101, 3800 Barrett Drive, Raleigh, NC 27609, (919) 571-4700.

Junior Engineering Technical Society

The Junior Engineering Technical Society is one of the nation's oldest organizations for the promotion of science, math, and technology. JETS Day is a day of challenging competitions between high schools in a variety of activities. Opportunities to meet with engineers, scientists, college students, and college faculty members to discuss college or careers are provided. Displays are set up by visiting scientists and engineers and a chemistry and physics demonstration show is held. JETS Day is sponsored by North Carolina State University with assistance from professional engineers and their organizations. This event requires on-the-spot thinking and problem solving usually within groups of two-six students.

For more information contact William Babcock, College of Engineering, Deans Office, North Carolina State University, Raleigh, NC 27695, (919) 515-2342.

North Carolina Junior Science and Humanities Symposium

The symposium provides opportunities for talented high school students to present results of research papers, to meet research investigators at work in their laboratories, to hear lectures on current research in the sciences, and to consider the effects of research upon human life. The annual NCJSHS is sponsored by the N.C. Academy of Science, the U.S. Army Research Office, N.C. State University, and UNC-Chapel Hill. The N.C. Department of Public Instruction serves as a resource agency.

For more information contact Jack Wheatley, Department of Science and Math Education, N.C. State University, Box 7801, Raleigh, NC 27695-7801, (919) 515-6905 or Pat Bowers, Center for Mathematics and Science Education, UNC-Chapel Hill, CB #3500, Chapel Hill, NC 27599-3500, (919) 966-5922.

U.S. Department of Energy High School Science Honors Program

This prestigious program enables selected students to have a unique opportunity to work with the nation's leading scientists at their respective institutions. Student eligibility criteria are:

be an entering or graduating senior;
demonstrate superior academic achievement and recognition in science and/or mathematics;
be available to participate if selected;
demonstrate a high degree of responsibility and social maturity;
meet coursework requirements specified by the host laboratory; and not be a former participant.

For more information contact Clinton (Jake) Brown, High School Team A, Department of Public Instruction, 301 North Wilmington Street, Raleigh, NC 27601-2825, (919) 715-1853.

Muddy Water - Essay Contest for High School Students

The purpose of this contest is to involve North Carolina high school students in a science-based, research/writing experience on the subject of water quality, the control of soil erosion, and the sedimentation process caused by land disturbing activities. Public awareness of sedimentation pollution and erosion-control measures is increased through this enhancement of students' research, composition, and public speaking skills.

Each participating student and teacher is given a certificate of appreciation. Each regional winning student and teacher receives $50. Each state winning student and teacher receives $100 for third place, $250 for second place, and $500 for first place. This contest is sponsored by the N.C. Department of Environment, Health, and Natural Resources and the N.C. Sedimentation Control Commission.

For more information contact Clinton (Jake) Brown, High School Team A, Department of Public Instruction, 301 North Wilmington Street, Raleigh, NC 27601-2825, (919) 715-1853.

National Science Scholars Program

The National Science Scholars Program is a federally-funded program to award scholarships to students for undergraduate study of the physical, life, and computer sciences, mathematics, or engineering at institutions of higher education. Scholars are nominated by the state nominating committees and selected by the President in consultation with the Director of the National Science Foundation and the Secretary of Education.

Selection criteria to evaluate the applications of eligible students provide for the nomination of individuals who have demonstrated outstanding academic achievement at the secondary level in the physical, life or computer sciences, mathematics, or engineering, and who show promise of continued outstanding academic performance at the postsecondary level and the motivation to pursue a career in the scholarship disciplines.

For more information contact Clinton (Jake) Brown, High School Team A, Department of Public Instruction, 301 North Wilmington Street, Raleigh, NC 27601-2825, (919) 715-1853.

APPENDIX B

Teacher Programs

United States Department of Energy (DOE) Teacher Research Associates (TRAC) Program

The purpose of this program is to provide outstanding middle and high school science, mathematics, and technology education teachers with professional scientific and engineering experience through summer research at one of 25 DOE national laboratories, facilities, and energy technology centers; to enhance teacher leadership skills; to increase the teachers' awareness and understanding of current science and technology; and to promote the transfer of this knowledge to the classroom.

This program is open to middle and high school teachers (grades 7-12) employed full time in public, private, or parochial schools in the U.S., Puerto Rico, and U.S. Territories and Commonwealths and whose major teaching assignment is in science, mathematics, or technology education. A bachelor's degree or above is required, preferably in science or mathematics. Former TRAC appointees are not eligible for reappointment under this program. U.S. citizenship or Permanent Resident Alien status is required.

Selection is based on the applicant's educational and professional qualifications, commitment to teaching, references, compatibility of scientific interests and proposed research with the needs and resources of the host laboratory, and declared benefit of the laboratory research experience to the applicant, the applicant's home institution, and the laboratory.

The DOE/TRAC laboratory appointment is normally for eight weeks and is non-renewable under DOE/TRAC sponsorship with a stipend and other benefits provided.

For application forms and additional information, contact Associated Western Universities, Inc., Attn.: DOE/TRAC Program, 4190 South Highland Drive, Suite 211, Salt Lake City, UT 84124, (801) 278-0799.

Presidential Awards for Excellence in Science and Mathematics Teaching (PAESMT) Program

This program, established in 1983 by The White House, is administered by the National Science Foundation (NSF). The program identifies outstanding K-12 teachers of science and mathematics with recognition given to four award groups: (1) elementary mathematics, (2) elementary science, (3) secondary mathematics, (4) secondary science. The secondary groups include middle, junior, and senior high school teachers.

Science nominees should show evidence of subject-matter competence and professional growth in teaching; an understanding of how students learn science; ability to engage students in direct hands-on science inquiry activities; ability to foster curiosity and generate excitement among students, colleagues, and parents about science in everyday life; a conviction that all students can learn science and a sensitivity to the needs of all students' cultural, linguistic, learning, and social uniqueness; an understanding of the science/mathematics relationship and the interconnectedness of all subjects; an experimental and innovative approach to teaching; and professional involvement and leadership.

Committees choose three candidates from each of the four award groups for recognition at the state level. These candidates are eligible for selection as their state's Presidential Awardee. Each of the 12 state-level awardees receives the NSF State Award of $750 for Excellence in the Teaching of Mathematics and Science. A national selection committee recommends the national winners to the NSF. These recommendations are sent to the President. The Presidential Awardees are notified by The White House.

The Presidential Award includes a $7,500 NSF grant to the awardee's school, to be spent under the awardee's direction over a three-year period, to improve school science programs; generous gifts to the awardees and their schools from private sector donors; and an expense-paid trip for the awardee and spouse/guest to Washington, DC, for a series of recognition events which include an awards ceremony and Presidential citation, meetings with leaders in government and education, seminars with NSF representatives, and workshops for sharing ideas and teaching experiences.

For more information contact Brenda Evans, Elementary Team A, Department of Public Instruction, 301 North Wilmington Street, Raleigh, NC 27601-2825, (919) 715-1854.

APPENDIX C

Resources /Agencies

North Carolina Aquariums

The mission of the Aquariums is to work "toward a greater understanding of North Carolina's aquatic resources." Because they are located in and near unique coastal habitats, the Aquariums offer unique educational opportunities for teachers. Facilities are designed for effective education and include fresh and saltwater displays, touch tanks, interactive exhibits, classrooms, meeting rooms, nature trails, gift shops, and auditoriums. Educational activities abound and include live animal programs, field trips, boat trips, lectures, behind-the-scenes tours, children's programs, arts and crafts programs, teacher workshops, and other events. The three aquariums are located on Roanoke Island near Manteo, (919) 473-3494; at Pine Knoll Shores near Morehead City, (919) 247-4004; and at Fort Fisher near Wilmington, (919) 458-8259.

Division of Coastal Management

Through the Estuarine Research Reserve System, which includes Currituck Banks, Rachel Carson, Masonboro Island, and Zeke's Island, the Division of Coastal Management has the responsibility to preserves representative estuarine sites for research and education on the natural and human processes that affect the coast. Within the Division of Coastal Management is an education specialist assigned to and located in the Maritime Museum in Beaufort who performs a variety of environmental educational activities. Currently, there are general public and school programs at the Rachel Carson site near Morehead City and Zeke's Island near Wilmington. (919) 733-2293.

Division of Forest Resources

The North Carolina Division of Forest Resources operates an educational state forest system of six forests - Turnbull Creek in Bladen County, Clemmons in Johnston County, Holmes in Henderson County, Rendezvous Mountain in Wilkes County, Tuttle in Caldwell County, and Jordan Lake in Chatham County. The major goal of the educational state forest system is the education of the general public, primarily school children, to the forest environment.

The learning experience at each educational state forest is accomplished in three ways: self-guided interpretive programs; ranger conducted programs; and teacher workshops such as Project Learning Tree, Project WILD, and Investigating Your Environment with certificate renewal credit offered through the N.C. Department of Public Instruction. (919) 733-2162.

Division of Land Resources

Within the Division of Land Resources, is a full time public education officer whose duties include creating environmental education programs aimed at public school children through curriculum development; providing technical assistance in the form of manuals and workshops for the implementation of the State Sediment/Pollution Control Act; and providing information on sedimentation issues to the general public in the form of service announcements and mailers. The division is comprised of three sections: Geologic Survey, Geodetic Survey, and Land Quality. The Geologic Survey Section has selected resources for earth science teachers. The NCGS has selected publications and maps to enrich the curricula; these are available at a nominal charge. The NCGS serves as a clearinghouse and can direct earth science teachers to other sources of earth science information. (919) 733-2423.

North Carolina State Museum of Natural Sciences

The purpose of the Museum of Natural Sciences is to enhance the public's understanding and appreciation of the natural environment in ways that emphasize the biodiversity of North Carolina and the southeastern United States and relate the region to the natural world as a whole. Environmental education of the general public, educators, and students is accomplished through workshops, outreach programs, exhibit hall presentations, and special programs. The museum is entering its seventeenth year of offering teacher workshops in natural history across the state and abroad. Teachers are invited to participate in Teacher Treks that provide an opportunity to experience and learn about the natural world, earn renewal credit, and meet people with a common interest in making science enjoyable and exciting for students. (919) 828-7023.

Division of Parks and Recreation

The North Carolina State Parks System exists for the enjoyment, education, health, and inspiration of all our citizens and visitors. The educational purpose of the state parks system is to teach and help people conserve and protect representative examples of the natural beauty, ecological features and recreational resources of statewide significance. The Division of Parks and Recreation maintains 32 state parks with trained educators and naturalists on staff. Each state park offers hands-on, interdisciplinary, curriculum-based programs and teacher workshops. Each park has in-depth programs with previsit, on-site and post-visit activities based on the park's primary resources. Park staff are also available to develop special programs. (919) 733-7275.

Sea Grant

UNC Sea Grant is a federal/state partnership dedicated to bring the best in research and education on coastal issues in North Carolina to target audiences. Located on the NCSU campus with staff also located in the three N.C. Aquariums, Sea Grant provides information and training through several avenues. Sea Grant produces a free newsletter, *Counchshell,* which provides timely information on workshops, publications and issues to educators throughout the state. Summer inservice programs, career days, advice on curriculum and field trips and undergraduate and graduate courses (at NCSU) are services from this office. A catalogue on curricular publications, field guides and videos are available on request. *Coastwatch is* the magazine for coastal issues from Sea Grant. (919) 515-2454.

Division of Soil and Water Conservation

The Division of Soil and Water Conservation provides assistance to local Soil and Water Conservation Districts (SWCD). Most of these locals SWCDs have environmental education programs that they promote. They will try to handle requests for information, programs, speakers, and contests that they sponsor depending upon available staff time and funds. Please call (919) 733-2302 for more information and the telephone number of your local SWCD office.

Division of Water Resources

The Division conducts programs for river basin management, water supply, water conservation, navigation, stream clearance, flood control, beach protection, aquatic weed control, hydroelectric power and recreational uses of water. Environmental Education Programs within the Division are in the form of the highly effective Stream Watch Program and community outreach. (919) 733-4064.

North Carolina Wildlife Resources Commission, Division of Conservation Education

Through the Division of Conservation Education within the Commission, environmental education of North Carolina citizens is a primary focus. Three areas through which the commission is able to reach the public is through the WILD Store Products and the teacher workshops, NC WILD and CATCH. The WILD Store promotes a line of environmental educational products for purchase and for distribution through workshops. Products can range from teacher's guides that meet the Department of Public Instruction curriculum goals to posters, books, and videos. NC WILD and CATCH are workshops for educators interested in integrating the outdoors as part of the learning experience. (919)733-7123.

North Carolina Zoological Park

The North Carolina Zoological Park is home to over 800 animals and 15,000 exotic plants. Through the exhibits, the zoo promotes conservation, education, and research. Environmental education of the general public, educators, and students is accomplished through workshops, special programs, special events, and interaction with visitors on the zoo grounds. The North Carolina Zoo offers free admission for all North Carolina students (K-University) which allows them to study topics such as adaptations, ecosystems, and conservation while observing exotic species. Students may take part in instructional programs or tours for a $25 fee per session. Services available at no charge include brochures, informational scavenger hunts, interpretive graphics, and "Smart Carts" that provide hands-on learning experiences. Workshops also are offered for teachers. For further information, call the Zoo's education division at (910) 897-7700.

North Carolina Mathematics and Science Coalition

The North Carolina Mathematics and Science Coalition is a statewide organization of education, public policy, civic, community, and business leaders. Coalition members work together as a forum to stimulate and promote efforts to implement systemic reforms in mathematics and science education in North Carolina. The purpose of the Coalition is to focus, encourage, and facilitate state-level efforts toward curricular change, statewide assessment, and professional development in support of improved instruction in mathematics and science.

For more information contact Director, Mathematics and Science Education Network, UNC-Chapel Hill, CB# 3345, Chapel Hill, NC 27599-3345, (919) 966-3256.

North Carolina Science and Mathematics Alliance

The North Carolina Science and Mathematics Alliance builds regional partnerships bringing together education, business, industry, and communities to systemically restructure science and mathematics education. The three main goals are to transform science and mathematics instruction into inquiry-based, problem-solving explorations; to improve access, participation, and achievement of groups underrepresented and underserved in science, mathematics, and technology education; and to promote public awareness of and active involvement in excellent science and mathematics teaching and learning, especially among community, educational, business and industrial leaders, teachers, parents, and students.

The Alliance guides and supports the operation of Regional Partnerships, coordinating their activities with state-level curriculum, assessment, and professional development plans developed by the N.C. Department of Public Instruction, the UNC Mathematics and Science Education Network, and the N.C. Tech Prep Leadership Development Center for science and mathematics.

For more information contact Director, N.C. Science and Mathematics Alliance, Suite 306, 410 Oberlin Road, Raleigh, NC 27605, (919) 733-9161.

North Carolina Science Leadership Association

Membership in the North Carolina Science Leadership Association is open to all individuals who are concerned with, and interested in, the improvement of science education. Department chairpersons, supervisors, consultants, administrators, coordinators, directors of science in private and public school systems at the elementary, middle, and secondary levels, as well as outreach organizations, research organizations, businesses, and community organizations are cordially invited to become members of the N.C. Science Leadership Association.

This organization is affiliated with the N.C. Science Teachers Association, the National Science Supervisors Association, and the National Science Teachers Association. Benefits include a newsletter and leadership conferences twice a year. The organization recognizes outstanding leadership in science education.

For more information contact Rachel Clark, 1802 South 15th Street, Wilmington, NC 28401, (919) 763-5431.

North Carolina Science Teachers Association

The purpose of the North Carolina Science Teachers Association (NCSTA), an affiliate of the National Science Teachers Association, is to promote science education across North Carolina. Membership is encouraged for all teachers who are actively engaged in teaching science at all grade levels and individuals who have an interest in science education. Benefits of membership include an annual conference, drive-in conferences, a quarterly newsletter, an annual journal, and teaching materials. Study, research, and curriculum grants are available to members. NCSTA also recognizes outstanding teaching and leadership with annual awards and honors.

For more information write NCSTA, P.O. Box 25342, Raleigh, NC 276031712.

UNC Mathematics and Science Education Network

In 1984 the North Carolina General Assembly created the UNC Mathematics and Science Education Network (MSEN) to help improve the quality of mathematics and science teaching and learning in the schools of North Carolina. The MSEN provides statewide leadership in efforts to: (1) strengthen the quality of and increase the size of the teaching base in mathematics and science education; and (2) increase the pool of students who graduate from North Carolina high schools prepared to pursue careers requiring mathematics and science.

MSEN's central coordinating office is located at UNC-Chapel Hill with Mathematics and Science Education Centers located on ten UNC-system campuses across the state. MSEN's major program components are inservice teacher education, a pre-college program for minority and female students, and applied research.

For more information contact Director, Mathematics and Science Education Network, UNC-Chapel Hill, CB# 3345, Chapel Hill, NC 275993345, (919) 966-3256.

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SECOND LANGUAGE STUDIES

Standard Course of Study and Grade Level Competencies

K-12

Public Schools of North Carolina
Department of Public Instruction

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SECOND LANGUAGE STUDIES

Modern Languages K-12

PURPOSE, OVERVIEW AND RATIONALE

The purpose of the program in modern languages K-12 in North Carolina is to enable students to develop the ability to communicate directly and effectively with people from other cultures who speak other languages. Therefore, the focus of the curriculum is the progressive development of the skills of listening, speaking, reading, and writing in the second language within the context of the cultures in which the language is spoken. Students communicate orally and in writing while learning about the customs and life-styles of other peoples and their contributions to the world in which they live.

The developmental nature of language learning requires daily language use in a long, unbroken sequence that permits students to develop communicative competence in the second language in as natural a manner as in the first language. It begins with the listening and speaking skills followed later by the integration of reading and writing. Vocabulary and grammar are not studied in isolation but are incorporated into the development of all the communication skills.

Renewed interest in the study of a second language has been on the rise throughout the United States since the late 1970's. The concern for the monolingualism of Americans, "Tongue-Tied Americans" as they were called by Senator Paul Simon of Illinois, was expressed strongly by the President's Commission on Foreign Languages and International Studies in 1979 in its report entitled **STRENGTH THROUGH WISDOM**:

> Americans' scandalous incompetence in foreign languages also explains our dangerously inadequate understanding of world affairs. Our schools graduate a large majority of students whose knowledge and vision stops at the American shoreline, whose approach to international affairs is provincial, and whose heads have been filled with astonishing misinformation.
>
> The President's Commission believes that our lack of foreign language competence diminishes our capabilities in diplomacy, in foreign trade, and in citizen comprehension in the world in which we live and compete.

Calls for expanded and improved instruction in second languages have been sounded in many subsequent national reports. Both the National Governor's Association and the Southern Governor's Association have offered recommendations for reform. **A NATION AT RISK** (1983) placed the study of foreign languages and culture alongside the five other "basics" of English, mathematics, computer science, social studies, and the natural sciences as a fundamental component of a sound education and stated that the study should begin in the elementary grades. **WHAT WORKS: RESEARCH ABOUT TEACHING AND LEARNING** (1986), a publication of the United States Department of Education, encourages foreign language instruction at an early age. William Bennett's **JAMES MADISON ELEMENTARY SCHOOL: A CURRICULUM FOR AMERICAN STUDENTS** (1988) includes foreign language in the outline of knowledge and skills basic to the American elementary curriculum. Finally in 1994 Congress included foreign language study as part of Goals 2000.

With the adoption of the of the Basic Education Program and the **STANDARD COURSE OF STUDY** (1985), North Carolina led the nation in declaring that second languages should be part of a basic education for all. Students in grades K-5 would be required to study a second language and would have the opportunity to continue the study of that language in grades 6-12. Many reasons can be cited to support the importance of second language study for all children in our state. In examining the economic future of North Carolina and our country, we note that we are becoming increasingly dependent on foreign investment and international trade. Recent trade agreements hold the promise of greatly increased trade with Canada and Mexico. As we look toward expanding our share of the world market, we know that we will need to be able to sell our goods in the language of the customer in order to be competitive. In addition, many of us may be employed by foreign-owned companies, and we will be better able to work for and with people from other countries if we know their language and understand their culture.

Secondly, North Carolina is becoming the home for more and more individuals whose first language is not English. According to the 1990 Census, the number of Hispanics living in the state increased 35% in the decade. The numbers of Asians and Pacific Islanders have also jumped sharply. Although North Carolina is ranked 38th in terms of total immigration, communities across the state are feeling the impact. Individuals of limited English proficiency are no longer concentrated in the large cities but are moving to many small towns and rural areas from the mountains to the coast. Communities throughout the state are being called upon to provide services for the immigrant populations in the schools, hospitals, businesses, and social and governmental agencies.

Finally, one of the most important benefits of second language study is that it often leads to improvement in the first language. For example, various studies of students in partial immersion or total immersion second language programs where students are taught basic skills through another language show that they usually achieve at higher levels than their peers who are taught only in English, even when the testing is done in English. A study conducted in Louisiana in 1986 showed that third, fourth, and fifth graders studying French for thirty minutes per day achieved significantly higher scores on the 1985 Basic Skills Language Arts Test than did a similar group of students who had no instruction in French. In addition, by the fifth grade, scores of those in the French program were higher in mathematics as well. Moreover, according to a variety of research conducted by Thomas Cooper, the study of a second language had a direct correlation with scores on the SAT-Verbal according to the number of years of that study – longer sequences correlated with higher scores. In addition, the verbal scores of students who had taken four or five years of foreign language were higher than the verbal scores of students who had taken four or five years of any other subject.

PROGRAM OUTCOMES

The K-12 program in second language studies is designed to provide students in the North Carolina public schools with the opportunity to acquire communicative competence in a second language and to develop an understanding of other cultures to help prepare them to meet the challenges of our global society. It can be divided into five major areas: listening, speaking, reading, writing, and culture. All of these areas are interdependent and interrelated.

At each stage of learning throughout the K-12 sequence, a student should exhibit progressive development of proficiency in each area as follows:

Listening—the ability to understand a second language in context when spoken by an educated native speaker

Speaking—the ability to speak the second language so as to be understood by a native speaker of that language

Reading—the ability to understand the written language in context from print and nonprint materials in the second language

Writing—the ability to write in the second language so as to be understood by a native of the target culture

Culture—to have knowledge and understanding of other peoples and to use language and behavior characteristic of real-life situations in the cultures in which the language is spoken

THE INTERRELATIONSHIP OF PROFICIENCY, GRAMMAR, VOCABULARY, AND CULTURE

Proficiency is the organizing principle for much of the instruction in the modern foreign languages and refers to the ability to communicate directly and effectively in the second language. The ACTFL Proficiency Guidelines (1986) form the basis for the North Carolina second language curriculum. They describe the various stages of language development from novice to superior in the four skills of listening, speaking, reading, and writing. The Proficiency Guidelines are not a prescribed methodology but they do have implications for curriculum, instruction, and assessment with their emphasis on the functional use of oral and written language in authentic settings with native speakers.

Because proficiency-based curriculum and instruction focus on teaching for communication, grammar and vocabulary are not treated as specific objectives. As students acquire language naturally, they increase their knowledge of grammar and vocabulary. Grammatical concepts are taught and applied in context and vocabulary is imbedded within activities that are designed to guide students to master the functional objectives. The grammar and vocabulary that are presented to pupils should be situational, contextual, and directly related to curricular, academic, social, and survival concepts that students have mastered, as well as to experiences they have had and are having both in and out of school.

Culture should be integrated throughout the second language curriculum. It should be presented within the situational context in which students are acquiring and using language and not in discrete-item format. As pupils develop the four language skills, the teacher incorporates cultural components that may include the culture's contributions to the advancement of civilization and the patterns of daily behaviors in countries or regions where the language is spoken. Materials and activities need to be appropriate to the objectives of a lesson at the grade level and interest level of the students. Thus, students are consistently and systematically provided with opportunities to gain cultural knowledge while developing an increasingly greater ability to use all four language skills to communicate.

SECOND LANGUAGES AND THE TOTAL CURRICULUM

In 1993, the Department of Public Instruction set two primary goals for education in North Carolina:

GOAL 1: **Every child should be proficient in the enabling skills of reading, writing, mathematics, and thinking at levels sufficient to ensure success at the next level of schooling.**

GOAL 2: **Every student should receive a high school diploma that reflects attainment of proficiencies sufficient for the technological needs and jobs of the future.**

The second language program supports both of these goals. The integration of other areas of the curriculum lends itself well to second language acquisition since it enables students to use prior skills and knowledge and involve them in active learning, making language really comprehensible and manageably producible.

The focus of the study of a second language is communication. All of the aspects of communicative competence – the gathering of information, concept clarification, thought organization, clear conveyance of meaning, analysis, synthesis, integration, and evaluation – form an integral part of second language acquisition. The same functions that one may perform in the native language can be performed in the second language.

Research suggests that students learn to read once and that reading proficiency transfers from one language to another. Students who develop confidence in their ability to comprehend literal meaning and to infer implied meaning in a piece of writing carry that strength to new learning contexts. Strengths build upon strengths. A student who can determine a main idea from a written passage in French can do so in English. Similar transfer occurs in writing. A student who can express a personal point of view may have developed that skill in English but can transfer it to Spanish, multiplying by many millions those who can understand and appreciate that point-of-view.

Mathematics has been defined as a study of patterns. The skills and processes required in mathematics are similar to those used to recognize, identify, and use learned patterns in the second language. Moreover, mathematics activities often provide the perfect vehicle for second language practice. In the elementary classroom, second language teachers can reinforce the mathematical concepts as they teach numbers, shapes, qualification, and comparisons. In the upper grades, teachers can use the mathematical concepts already mastered to provide a framework for second language activities. In addition, the second language program provides a culturally authentic context for teaching the metric system. Although not considered essential for life in the United States, it is an integral part of the economic system for the rest of the world.

The entire process of second language acquisition calls upon students to utilize a variety of thinking skills. As they learn the second language, they will relate it to the first language and be called upon to transfer skills from the first to the second language and from the second language back to the first. Successful second language learners develop an awareness of their own thinking and continuously make connections with previously acquired skills and knowledge. They often compare, classify, order, identify relationships, predict, elaborate, and verify. Effective second language teachers infuse problem solving, decision making, and invention into their classroom activities as they help students develop communicative competence. Listening, speaking, reading, and writing in the second language, just like the first language, enable learners to clarify their thinking, to investigate, and to increase knowledge in many areas.

The second language can be the vehicle for instruction in other subject areas of the curriculum as well. Second language study is closely aligned with social studies. It is impossible to learn a language without studying its culture. The second language program helps students recognize cross-cultural similarities and cross-cultural differences and to understand how other cultures influence their own. Efforts should be made to reinforce social studies objectives at each grade level through second language instruction. Science can also be integrated in second language instruction. Scientific processes are observable and therefore lend themselves to second language acquisition. In addition, scientific terms are similar in many languages and can provide the context for teaching any of the communication skills. Music, visual arts, dance, and theater provide a cultural framework for second language instruction and give students other means of communication which support communication in the second language. Physical education activities can be conducted readily in the second language and health concerns can provide the context for discussion.

The ability to communicate in a second language will be a valuable skill for students as they prepare for the jobs of the future. Our interconnected world, as well as the changing demographics in the state and the nation, suggest that a great many students will find their work situation either dependent upon or greatly enhanced by second language proficiency whether working abroad or living and working in a growing multicultural/multilingual community at home. In this technological age when information is abundant and communication instantaneous, it is insufficient to develop faster faxes without understanding the languages in which they are written.

ORGANIZATION OF THE CURRICULUM

The Revised Second Language Curriculum is designed to address the needs of all students engaged in the study of a modern second language, regardless of the language they study or the grade level at which they begin that study. It recognizes that all students start acquiring a second language in the same way and therefore pass through the same stages of language development, although they may participate in different learning activities which are appropriate for their ages, interests, and experiences.

The Goals and Objectives of the Curriculum were developed and reviewed by teachers and other second language educators of French, German and Spanish and can be applied equally to all three languages. The Curriculum can also serve as a guide for teachers of the less-commonly taught languages such as Japanese, Chinese, Russian and Arabic. However, some adaptations will most likely need to made, particularly in the areas of reading and writing, since those languages are written in very different alphabets and have different language structures. In addition, although the stages of language development apply, native English-speaking students learning one of the less-commonly taught languages may require more time at each stage to develop communicative competence.

The Curriculum is organized around five goals which correspond to the program outcomes:

Listening: **To understand language in context when spoken by an educated native speaker**

Speaking: **To speak the language so as to be understood by a native speaker of that language**

Reading: **To understand the written language in context from print and nonprint materials in the target language**

Writing: **To write so as to be understood by a native of the target culture**

Culture: **To gain knowledge and understanding of other peoples and the ability to use language and behavior characteristic of real-life situations in the cultures in which the language is spoken**

The objectives for Listening, Speaking, Reading, and Writing are divided into three Stages.

STAGE ONE

Stage One is the beginning stage of language learning. At this stage students start by understanding and producing isolated words and learned phrases. Later, they can understand and use everyday words, action words, commands, simple phrases, sentences, and questions. Comprehension is generally better than language production. Students develop aural/oral skills first; then they begin to read and write what they can already understand and say.

STAGE TWO

Stage Two is the continuing stage of language learning. At this stage students can create with language. They initiate and sustain basic communicative tasks. They ask and answer simple questions, narrate and describe in sentences and groups of related sentences, read and understand short written passages, and compose short messages, announcements, and simple letters.

STAGE THREE

Stage Three is the advanced stage of language learning. At this stage, students can converse on everyday topics, communicate in past, present, and future time, understand and summarize written material on general topics, compose cohesive paragraphs, and develop organized compositions and reports. At this stage, students can be understood by native speakers of the language who are unaccustomed to dealing with foreigners.

Sample measures have been developed in grade groups for each objective. The measures are a variety of suggestions for ways in which the students may demonstrate that they are able to meet the objectives. They correspond to the level of language development and the level of cognitive development of the students. They incorporate other appropriate areas of the curriculum as well as student needs and interests. The measures are divided as follows:

STAGE ONE
- **Grades K-2 (Listening and Speaking Only)**
- **Grades 3-5**
- **Grades 6-8**
- **Grades 9-12**

STAGE TWO
- **Grades 6-8**
- **Grades 9-12**

STAGE THREE
- **Grades 9-12**

CULTURAL OBJECTIVES

Cultural objectives have been established according to grade groups since they are inextricably linked to the students' developmental level and their prior knowledge and experience. At grades K-2, children learn basic gestures, greetings and expressions, children's songs, rhymes, dances and games; participate in activities related to major holidays and celebrations; and become acquainted with children's stories from other cultures. At grades 3-5, children participate in a wider range of activities which reflect the customs and traditions of children in other cultures and begin to develop an awareness of the geography of the countries where the language is spoken. At grades 6-8, students participate in activities which are characteristic of young adolescents in other cultures, develop an understanding of adolescent literature, increase their knowledge and understanding of the geography of other countries, begin to identify important individuals from those countries and their contributions, and begin to develop an awareness of the interrelationship of other cultures to their own. At grades 9-12, students utilize appropriate greetings, expressions, and behaviors which are characteristic of other cultures; experience different customs and traditions; recognize the relationship between geography and culture; identify important events, achievements, and contributions of other countries; become aware of the literature of the cultures in which the language is spoken; and demonstrate understanding of the interrelationship of their own and other cultures.

Sample measures are included for each of the cultural objectives which correspond to the students' cognitive development. Because culture and language are interdependent, many of the measures are communicative. At grades 6-8 and 9-12, they represent the various stages of second language development that are present within those grade groups.

SECOND LANGUAGE GOALS AND OBJECTIVES

LISTENING GOAL: TO UNDERSTAND LANGUAGE IN CONTEXT WHEN SPOKEN BY AN EDUCATED NATIVE SPEAKER.

STAGE ONE

1.1 Demonstrate understanding of everyday words when heard.
1.2 Follow affirmative and negative directions and commands.
1.3 Demonstrate understanding of simple affirmative and negative phrases, statements, and questions.
1.4 Demonstrate understanding of who, what, where, how, when, and how much/many questions.
1.5 Demonstrate understanding of descriptive words in simple phrases and sentences.
1.6 Demonstrate understanding of expressions of emotion, condition, and preference.
1.7 Demonstrate understanding of action words in context.
1.8 Recall facts and make inferences from a group of related sentences.

STAGE TWO

2.1 Demonstrate understanding of words, phrases, simple statements and questions heard without visual cues or props.
2.2 Demonstrate understanding of meaning from context clues.
2.3 Demonstrate understanding of expressions of emotion, condition, and preference.
2.4 Extract the main idea from material heard.
2.5 Recall facts and list details from material viewed and heard.
2.6 Demonstrate understanding of descriptive passages when heard which compare or contrast two or more elements or which depict the relationship between or among the elements.
2.7 Demonstrate understanding of material heard by predicting outcomes, drawing inferences, and making judgments.

STAGE THREE

3.1 Recognize past, present, and future time when heard in simple and complex sentences and in longer passages.
3.2 Recognize intonation patterns and their effect on meaning.
3.3 Demonstrate understanding of the main idea in telephone calls, radio and TV broadcasts, oral reports, poems, and short stories.
3.4 Summarize conversations and oral passages on everyday topics, personal interests and activities, and current events.
3.5 Identify feelings, emotions, and preferences as expressed in conversations, songs, poems, paragraphs, and excerpts from literature and media.
3.6 Demonstrate understanding of material heard by predicting outcomes, drawing inferences, and making judgments.
3.7 Demonstrate understanding of point of view or purpose.

SPEAKING GOAL: TO SPEAK THE LANGUAGE SO AS TO BE UNDERSTOOD BY A NATIVE SPEAKER OF THAT LANGUAGE.

STAGE ONE

1.1 Use everyday words in speech.
1.2 Use simple phrases, including courtesy formulae.
1.3 Use learned sentences in everyday situations.
1.4 Describe pictures/visuals, people, places, and objects in the immediate environment.
1.5 Express emotion, preference, wishing, and condition.
1.6 Use action words and phrases.
1.7 Give affirmative commands.
1.8 Express possession.
1.9 Ask questions.

STAGE TWO

2.1 Use learned phrases and sentences to initiate and sustain simple conversation.
2.2 Recombine known language to produce personalized statements, questions, and responses.
2.3 Produce negative and affirmative statements and questions.
2.4 Describe in phrases and sentences people, places, things, activities, and events.
2.5 Describe a sequence of events.
2.6 Make comparisons and contrasts.
2.7 Express emotion, condition, and preference.
2.8 Use language to classify, summarize, predict, judge, and infer.

STAGE THREE

3.1 Converse on everyday topics with accuracy in some basic language structures using stress, rhythm, and intonation which are comprehensible to a native speaker.
3.2 Communicate orally in past, present, and future time.
3.3 Ask questions to seek information and clarification of meaning; give specific information orally.
3.4 Describe with detail a person, place or thing.
3.5 Narrate a simple story or deliver a simple oral report.
3.6 Express emotions, feelings, and preferences and give supporting details.
3.7 Express personal point of view and support it.

READING GOAL: TO UNDERSTAND THE WRITTEN LANGUAGE IN CONTEXT FROM PRINT AND NONPRINT MATERIALS IN THE TARGET LANGUAGE.

STAGE ONE

1.1 Recognize written words in context which are already understood in the target language.
1.2 Demonstrate understanding of simple phrases and sentences when read.
1.3 Recall facts from a series of connected sentences.
1.4 Make inferences from material read.

STAGE TWO

2.1 Demonstrate understanding of short written passages by identifying words that relate to the main idea.
2.2 Obtain information through reading.
2.3 Identify the main idea and supporting details from single paragraphs and longer narrative and descriptive passages, including authentic materials.
2.4 Identify a sequence of events in a narrative.
2.5 Read familiar written materials for the purpose of summarizing.

STAGE THREE

3.1 Obtain information by reading.
3.2 Identify the main idea and supporting details from authentic materials such as newspaper and magazine articles and literary works.
3.3 Summarize written material on general topics and literary works.
3.4 Determine emotions, feelings, and preferences from reading selections.
3.5 Make predictions and judgments and draw inferences from written materials.
3.6 Demonstrate understanding of the author's point of view or purpose.

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WRITING GOAL: TO WRITE SO AS TO BE UNDERSTOOD BY A NATIVE OF THE TARGET CULTURE.

STAGE ONE

1.1 Copy learned phrases and sentences in context.
1.2 Write words from memory which are associated with visuals, props, or familiar contexts.
1.3 Write a familiar phrase, statement, or question in context.
1.4 Generate in writing two or more related sentences in context.

STAGE TWO

2.1 Recombine known language to produce personalized statements, questions, and responses.
2.2 Write controlled sentences and paragraphs.
2.3 Compose a series of original statements and/or questions related to personal experience.
2.4 Compose short messages, announcements, advertisements, postcards, and simple letters.
2.5 Compose a series of related sentences that describe, compare or contrast people, places, things, and/or activities.
2.6 Narrate a sequence of events.
2.7 Write one or more sentences that classify, summarize, predict, judge, or infer.

STAGE THREE

3.1 Compose a series of related sentences or a cohesive paragraph on a general topic with good control of some basic language structures.
3.2 Narrate in past, present, and future time.
3.3 Compose cohesive paragraphs which describe, compare or contrast in detail people, places, things, activities, situations, and events.
3.4 Develop an organized summary, composition, report, or article of more than one paragraph.
3.5 Express emotions, feelings and preferences and give supporting details.
3.6 Express personal point of view and support it.
3.7 Compose pattern poetry.

CULTURE GOAL: TO GAIN KNOWLEDGE AND UNDERSTANDING OF OTHER PEOPLES AND THE ABILITY TO USE LANGUAGE AND BEHAVIOR CHARACTERISTIC OF REAL-LIFE SITUATIONS IN THE CULTURES IN WHICH THE LANGUAGE IS SPOKEN.

GRADES K-2

4.1 Recognize and identify gestures, greetings, expressions, manners, and behaviors which are characteristic of the cultures in which the language is spoken.
4.2 Learn age-appropriate songs, rhymes, dances, and games of children in cultures where the language is spoken.
4.3 Demonstrate understanding of children's stories in cultures where the language is spoken.
4.4 Participate in activities related to major holidays, festivals, and special dates that are celebrated by children in the cultures where the language is spoken.

GRADES 3-5

5.1 Use gestures, greetings, expressions, manners, and behaviors which are characteristic of the cultures in which the language is spoken.
5.2 Learn age-appropriate songs, rhymes, and games of children in cultures where the language is spoken.
5.3 Demonstrate understanding of children's literature including stories, poetry, folk tales, fables, and legends in the cultures where the language is spoken.
5.4 Experience the music and dance from the cultures where the language is spoken.
5.5 Participate in activities which reflect the customs and traditions of children in the cultures where the language is spoken.
5.6 Locate on a map or globe the countries where the language is spoken.

GRADES 6-8

6.1 Use gestures, greetings, expressions, manners, and behaviors which are characteristic of the cultures in which the language is spoken.
6.2 Participate in activities which are characteristic of young adolescents in the cultures where the language is spoken.
6.3 Demonstrate understanding of adolescent literature including stories, poetry, plays, folk tales, fables, and legends in the cultures where the language is spoken.
6.4 Experience customs and traditions of cultures where the language is spoken.
6.5 Locate major cities and identify major geographical features of the countries where the language is spoken and show their relationship to the culture.
6.6 Identify important individuals from the past and present and their contributions in the countries where the language is spoken.
6.7 Demonstrate understanding of the interrelationship of other cultures with one's own culture and recognition of the similarities and differences.

GRADES 9-12

7.1 Utilize appropriate greetings, expressions, manners, and behaviors which are characteristic of cultures in which the language is spoken.
7.2 Participate in activities and experience customs and traditions which are characteristic of the cultures where the language is spoken.

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7.3 Demonstrate understanding of literature including stories, poetry, plays, folk tales, fables, and legends in the cultures where the language is spoken.
7.4 Demonstrate understanding of contemporary people and lifestyles.
7.5 Identify major geographical features, cities, and regions of the countries where the language is spoken and show their relationship to the culture.
7.6 Identify important events, achievements, and contributions in the countries where the language is spoken and show their influence on their own and other cultures.
7.7 Demonstrate understanding of the interrelationship of other cultures with one's own culture and recognition of the similarities and differences.

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GLOSSARY

Acquisition/Learning: "acquisition of a second language" refers to the natural way one acquires a second language through meaningful communication whereas "learning a second language" implies the formal study of a language including grammatical rules.

Cinquain: short poem consisting of five lines arranged in the following structure: line 1 states a subject in one word, line 2 describes the subject in two words, line 3 describes an action about the subject in three words, line 4 expresses an emotion about the subject in four words, line 5 restates the subject in another single word.

Cloze paragraph: paragraph in which one word is replaced with a blank at a specified interval, such as every fifth word. Students read the passage and fill in the missing words either orally or in writing. Rules vary as to whether a synonym is an acceptable replacement or if it must be the exact word. The cloze paragraph is a test of reading comprehension.

Collage: art form in which bits of objects, such as newspaper, cloth, pressed flowers, etc., are pasted together on a surface.

Communicative competence: ability to function in a communicative setting; that is to produce and understand what is appropriate to say, how it should be said, and when it should be said.

Context clues: information available to a reader for understanding an unfamiliar word from the meaning of a sentence as a whole, familiar language patterns, the meaning of surrounding words and sentences, and the position and function of the word.

Controlled paragraphs: paragraphs written according to stated guidelines, e.g., a certain readability level, a certain purpose for writing such as self-description.

Cross-cultural: spanning more than one culture.

Courtesy formulae: polite or helpful conventional expressions or remarks such as "thank you," " you are welcome," "please."

Cuisenaire rods: manipulative bars of different lengths and colors used to help children understand counting, sorting, matching and ordering.

Discrete item: test item which is assessed in isolation to see if a student has mastered a specific structure.

Educated native speaker: native speaker of the language who uses standard speech free of dialect and slang.

Everyday words: words a student would use in commonplace situations at home or in school. They include both tangible and intangible things and support the communication needs of the child.

Functional objectives: objectives centered around the uses to which the language can be put, e.g., asking questions, expressing disagreement, etc.

Functional use: ability to communicate in the second language on topics appropriate to age level.

Graphic organizer: visual and verbal map of vocabulary and concepts and their relationships designed to assist learners in comprehending selections. Examples are Venn diagrams, webs, bar/graphs, timelines, diagrams, flow charts, outlines, and semantic maps.

Inference: judgment or conclusion based on reasoning, e.g., reasoning by . inference from given premises.

Language experience: approach to learning to read in which a group of students' words or short oral compositions are written down and used as materials of instruction. The writing usually follows a shared experience.

Multicultural: addressing several cultures.

Multilingual: having more than one language.

Nonprint: symbols, words, pictures, and illustrations not in traditional print form such as those seen in computer programs and in the environment.

Nesting dolls: series of dolls, each of which is contained inside a slightly larger doll; found in Russian folk craft.

Oral/aural: dealing with speaking and listening.

Pair activity: activity involving oral or written communication between two students.

Partial immersion: approach to second language instruction in which part (at least half) of the school day is conducted in the second language.

Pattern story: story characterized by predictable story lines and the repetition of phrases and rhythm and/or rhyme which enable children to make predictions about content.

Pictionary: dictionary made up of pictures and symbols drawn to represent people, things, and events. It is used for pre-reading and pre-writing activities for students who are beginning to develop reading and writing skills.

Print: symbols, words, pictures, and illustrations as seen in books, magazines, leaflets.

Proficiency: ability to communicate effectively in both oral and written forms in the cultures where the language is spoken. Proficiency is made up of three components: function, content, and accuracy.

Proficiency-based curriculum: curriculum centered around proficiency where vocabulary and grammar are not taught in isolation, but rather as tools to accomplish communicative goals in particular settings on particular subjects.

Rebus story: story in which some words are deleted and are instead replaced by drawings representing the missing words.

Shadow box: small, shallow open box used to display small objects.

Story skeleton: organization of a story which involves the identification of the characters, the place, the problem, the goal, as well as the delineation of the sequence of events leading to the resolution of the previously stated problem.

Total immersion: approach to second language instruction in which the entire school day is conducted in the second language.

Visual clues: visible information such as tangible objects, gestures, etc., which may assist a reader in gaining meaning from unfamiliar words.

ACTFL (American Council of Teachers of Foreign Language) Proficiency Guidelines

Generic Descriptions-Speaking

Novice	The Novice level is characterized by the ability to communicate minimally with learned material.
Novice-Low	Oral production consists of isolated words and perhaps a few high-frequency phrases. Essentially no functional communicative ability.
Novice-Mid	Oral production continues to consist of isolated words and learned phrases within very predictable areas of need, although quality is increased. Vocabulary is sufficient only for handling simple, elementary needs and expressing basic courtesies. Utterances rarely consist of more than two or three words and show frequent long pauses and repetition of interlocutor's words. Speaker may have some difficulty producing even the simplest utterances. Some Novice-Mid speakers will be understood only with great difficulty.
Novice-High	Able to satisfy partially the requirements of basic communicative exchanges by relying heavily on learned utterances but occasionally expanding these through simple recombinations of their elements. Can ask questions or make statements involving learned material. Shows signs of spontaneity although this falls short of real autonomy of expression. Speech continues to consist of learned utterances rather than of personalized, situationally adapted ones. Vocabulary centers on areas such as basic objects, places, and most common kinship terms. Pronunciation may still be strongly influenced by first language. Errors are frequent and, in spite of repetition, some Novice-High speakers will have difficulty being understood even by sympathetic interlocutors.
Intermediate	The Intermediate level is characterized by the speaker's ability to: - create with the language by combining and recombining learned elements, though primarily in a reactive mode; - initiate, minimally sustain, and close in a simple way basic communicative tasks; and - ask and answer questions.
Intermediate-Low	Able to handle successfully a limited number of interactive, task-oriented and social situations. Can ask and answer questions, initiate and respond to simple statements and maintain face-to-face conversation, although in a highly restricted manner and with much linguistic inaccuracy. Within these limitations, can perform such tasks as introducing self, ordering a meal, asking directions, and making purchases. Vocabulary is adequate to express only the most elementary needs. Strong interference from native language may occur. Misunderstandings frequently arise, but with repetition, the Intermediate-Low speaker can generally be understood by sympathetic interlocutors.
Intermediate-Mid	Able to handle successfully a variety of uncomplicated, basic and communicative tasks and social situations. Can talk simply about self and family members. Can

ask and answer questions and participate in simple conversations on topics beyond the most immediate needs; e.g., personal history and leisure time activities. Utterance length increases slightly, but speech may continue to be characterized by frequent long pauses, since the smooth incorporation of even basic conversational strategies is often hindered as the speaker struggles to create appropriate language forms. Pronunciation may continue to be strongly influenced by first language and fluency may still be strained. Although misunderstandings still arise, the Intermediate-Mid speaker can generally be understood by sympathetic interlocutors.

Intermediate-High Able to handle successfully most uncomplicated communicative tasks and social situations. Can initiate, sustain, and close a general conversation with a number of strategies appropriate to a range of circumstances and topics, but errors are evident. Limited vocabulary still necessitates hesitation and may bring about slightly unexpected circumlocution. There is emerging evidence of connected discourse, particularly for simple narration and/or description. The Intermediate-High speaker can generally be understood even by interlocutors not accustomed to dealing with speakers at this level, but repetition may still be required.

Advanced The advanced level is characterized by the speaker's ability to:

- converse in a clearly participatory fashion;
- initiate, sustain, and bring to closure a wide variety of communicative tasks, including those that require an increased ability to convey meaning with diverse language strategies due to a complication or an unforeseen turn of events;
- satisfy the requirements of school and work situations; and
- narrate and describe with paragraph-length connected discourse.

Advanced Able to satisfy the requirements of everyday situations and routine school and work requirements. Can handle with confidence but not with facility complicated tasks and social situations, such as elaborating, complaining, and apologizing. Can narrate and describe with some details, linking sentences together smoothly. Can communicate facts and talk casually about topics of current public and personal interest, using general vocabulary. Shortcomings can often be smoothed over by communicative strategies, such as pause fillers, stalling devices, and different rates of speech. Circumlocution which arises from vocabulary or syntactic limitations very often is quite successful, though some groping for words may still be evident. The Advanced-level speaker can be understood without difficulty by native interlocutors.

Advanced-Plus Able to satisfy the requirements of a broad variety of everyday, school, and work situations. Can discuss concrete topics relating to particular interests and special fields of competence. There is emerging evidence of ability to support opinions, explain in detail, and hypothesize. The Advanced-Plus speaker often shows a well developed ability to compensate for an imperfect grasp of some forms with confident use of communicative strategies, such as paraphrasing and circumlocution. Differentiated vocabulary and intonation are effectively used to communicate fine shades of meaning. The Advanced-Plus speaker often shows remarkable fluency and ease of speech but under the demands of Superior-level, complex tasks, language may break down or prove inadequate.

Superior	The Superior level is characterized by the speaker's ability to: - participate effectively in most formal and informal conversations on practical, social, professional, and abstract topics; and - support opinions and hypothesize using native-like discourse strategies.
Superior	Able to speak the language with sufficient accuracy to participate effectively in most formal and informal conversations on practical, social, professional, and abstract topics. Can discuss special fields of competence and interest with ease. Can support opinion and hypothesize, but may not be able to tailor language to audience or discuss in depth highly abstract or unfamiliar topics. Usually the Superior level speaker is only partially familiar with regional or other dialectical variants. The Superior level speaker commands a wide variety of interactive strategies and shows good awareness of discourse strategies. The latter involves the ability to distinguish main ideas from supporting information through syntactic, lexical and suprasegmental features (pitch, stress, intonation). Sporadic errors may occur, particularly in low-frequency structures and some complex high-frequency structures more common to formal writing, but no patterns of error are evident. Error do not disturb the native speaker or interfere with communication.

Generic Descriptions-Listening

These guidelines assume that all listening tasks take place in an authentic environment at a normal rate of speech using standard or near-standard norms.

Novice-Low	Understanding is limited to occasional words, such as cognates, borrowed words, and high-frequency social conventions. Essentially no ability to comprehend even short utterances.
Novice-Mid	Able to understand some short, learned utterances, particularly where context strongly supports understanding and speech is clearly audible. Comprehends some words and phrases for simple questions, statements, high-frequency commands and courtesy formulae about topics that refer to basic personal information or the immediate physical setting. The listener requires long pauses for assimilation and periodically requests repetition and/or slower rate of speech.
Novice-High	Able to understand short, learned utterances and some sentence-length utterances, particularly where context strongly supports understanding and speech is clearly audible. Comprehends words and phrases from simple questions, statements, high-frequency commands and courtesy formulae. May require repetition, rephrasing and/or a slowed rate of speech for comprehension.
Intermediate-Low	Able to understand sentence-length utterances which consist of recombinations of learned elements in a limited number of content areas, particularly if strongly supported by the situational context. Content refers to basic personal back-ground and needs, social conventions and routine tasks, such as getting meals and receiving simple instructions and directions. Listening tasks pertain primarily to spontaneous face-to-face conversations. Understanding is often uneven; repetition and rewording may be necessary. Misunderstandings in both main ideas and details arise frequently.

Intermediate-Mid	Able to understand sentence-length utterances which consist of recombinations of learned utterances on a variety of topics. Content continues to refer primarily to basic personal background and needs, social conventions and somewhat more complex tasks, such as lodging, transportation, and shopping. Additional content areas include some personal interests and activities, and a greater diversity of instructions and directions. Listening tasks not only pertain to spontaneous face-to-face conversations but also to short routine telephone conversations and some deliberate speech, such as simple announcements and reports over the media. Understanding continues to be uneven.
Intermediate-High	Able to sustain understanding over longer stretches of connected discourse on a number of topics pertaining to different times and places; however, understanding is inconsistent due to failure to grasp main ideas and/or details. Thus, while topics do not differ significantly from those of an Advanced-level listener, comprehension is less in quantity and poorer in quality.
Advanced	Able to understand main ideas and most details of connected discourse on a variety of topics beyond the immediacy of the situation. Comprehension may be uneven due to a variety of linguistic and extra linguistic factors, among which topic familiarity is very prominent. These texts frequently involve description and narration in different time frames or aspects, such as present, nonpast, habitual, or imperfective. Texts may include interviews, short lectures on familiar topics, and news items and reports primarily dealing with factual information. Listener is aware of cohesive devices but may not be able to use them to follow the sequence of thought in an oral text.
Advanced-Plus	Able to understand the main ideas of most speech in a standard dialect; however, the listener may not be able to sustain comprehension in extended discourse which is proportionally and linguistically complex. Listener shows an emerging awareness of culturally implied meanings beyond the surface meanings of the text but may fail to socio-cultural nuances of the message.
Superior	Able to understand the main ideas of all speech in a standard dialect, including technical discussion in a field of specialization. Can follow the essentials of extended discourse which is propositionally and linguistically complex, as in academic/professional settings, in lectures, speeches, and reports. Listener shows some appreciation of aesthetic norms of target language, of idioms, colloquialisms, and register shifting. Able to make inferences within the cultural framework of the target language. Understanding is aided by an awareness of the underlying organizational structure of the oral text and includes sensitivity for its social and cultural references and its affective overtones. Rarely misunderstands but may not understand excessively rapid, highly colloquial speech or speech that has strong cultural references.
Distinguished	Able to understand all forms and styles of speech pertinent to personal, social and professional needs tailored to different audiences. Shows strong sensitivity to social and cultural references and aesthetic norms by processing language from within the cultural framework. Texts include theater plays, screen productions, editorials, symposia, academic debates, public policy statements, literary readings, and most jokes and puns. May have difficulty with some dialects and slang.

Generic Descriptions-Reading

These guidelines assume all reading texts to be authentic and legible.

Novice-Low	Able occasionally to identify isolated words and/or major phrases when strongly supported by context.
Novice-Mid	Able to recognize the symbols of an alphabetic and/or syllabic writing system and/or a limited number of characters in a system that uses characters. The reader can identify an increasing number of highly contextualized words and/or phrases including cognates and borrowed words, where appropriate. Material understood rarely exceeds a single phrase at a time, and rereading may be required.
Novice-High	Has sufficient control of the writing system to interpret written language in areas of practical need. Where vocabulary has been learned, can read for instructional and directional purposes standardized messages, phrases or expressions, such as some items on menus, schedules, timetables, maps, and signs. At times, but not on a consistent basis, the Novice-High level reader may be able to derive meaning from material at a slightly higher level where context and/or extra linguistic background knowledge are supportive. Intermediate-Low Able to understand main ideas and/or some facts from the simplest connected texts dealing with basic personal and social needs. Such texts are linguistically noncomplex and have a clear underlying internal structure, for example, chronological sequencing. They impart basic information about which the reader has to make only minimal suppositions or to which the reader brings personal interest and/or knowledge. Examples include messages with social purposes or information for the widest possible audience, such as public announcements and short, straightforward instructions dealing with public life. Some misunderstandings will occur.
Intermediate-Mid	Able to read consistently with increased understanding simple connected texts dealing with a variety of basic and social needs. Such texts are still linguistically noncomplex and have a clear underlying internal structure. They impart basic information about which the reader has to make minimal suppositions and to which the reader brings personal interest and/or knowledge. Examples may include short, straightforward descriptions of persons, places, and things written for a wide audience.
Intermediate-High	Able to read consistently with full understanding simple connected texts dealing with basic personal and social needs about which the reader has personal interest and/or knowledge. Can get some main ideas and information from texts at the next higher level featuring description and narration. Structural complexity may interfere with comprehension; for example, basic grammatical relations may be misinterpreted and temporal references may rely primarily on lexical items. Has some difficulty with the cohesive factors in discourse, such as matching pronouns with referents. While texts do not differ significantly from those at the Advanced level, comprehension is less consistent. May have to read material several times for understanding.

Advanced

Able to read somewhat longer prose of several paragraphs in length, particularly if presented with a clear underlying structure. The prose is predominantly in familiar sentence patterns. Reader gets the main ideas and facts and misses some details. Comprehension derives not only from situational and subject matter knowledge but from increasing control of the language. Texts at this level include descriptions and narrations such as simple short stories, news items, bibliographical information, social notices, personal correspondence, routinized business letters and simple technical material written for the general reader.

Advanced-Plus

Able to follow essential points of written discourse at the Superior level in areas of special interest or knowledge. Able to understand parts of texts which are conceptually abstract and linguistically complex, and/or texts which treat unfamiliar topics and situations, as well as some texts which involve aspects of target-language culture. Able to comprehend the facts to make appropriate inferences. An emerging awareness of the aesthetic properties of language and of its literary styles permits comprehension of a wider variety of texts, including literary. Misunderstandings may occur.

Superior Able to read with almost complete comprehension and at normal speed expository prose on unfamiliar subjects and a variety of literary texts. Reading ability is not dependent on subject matter knowledge, although the reader is not expected to comprehend thoroughly texts which are highly dependent on knowledge of the target culture. Reads easily for pleasure. Superior-level texts feature hypotheses, argumentation and supported opinions and include grammatical patterns and vocabulary ordinarily encountered in academic/professional reading. At this level, due to the control of general vocabulary and structure, the reader is almost always able to match the meanings derived from extralinguistic knowledge with meaning derived from knowledge of the language, allowing for smooth and efficient reading of diverse texts. Occasional misunderstandings may still occur; for example, the reader may experience some difficulty with unusually complex structures and low-frequency idioms. At the Superior level the reader can match strategies, top-down or bottom-up, which are most appropriate to the text. (Topdown strategies rely on real-world knowledge and prediction based on genre and organizational scheme of the text. Bottom-up strategies rely on actual linguistic knowledge.) Material at this level will include a variety of literary texts, editorials, correspondence, general reports and technical material in professional fields. Rereading is rarely necessary, and misreading is rare.

Distinguished

Able to read fluently and accurately most styles and forms of the language pertinent to academic and professional needs. Able to relate inferences in the text to real-world knowledge and understand almost all socio-linguistic and cultural references by processing language from within the cultural frame-work. Able to understand a writer's use of nuance and subtlety. Can readily follow unpredictable turns of thought and author intent in such materials as sophisticated editorials, specialized journal articles, and literary texts such as novels, plays, poems, as well as in any subject matter area directed to the general reader.

Generic Descriptions-Writing

Novice-Low	Able to form some letters in an alphabetic system. In languages whose writing systems use syllabaries or characters, writer is able to both copy and produce the basic strokes. Can produce romanization of isolated characters, where applicable.
Novice-Mid	Able to copy or transcribe familiar words or phrases and reproduce some from memory. No practical communicative writing skills.
Novice-High	Able to write simple fixed expressions and limited memorized material and some recombinations thereof. Can supply information on simple forms and documents. Can write names, numbers, dates, own nationality, and other simple autobiographical information as well as some short phrases and simple lists. Can write all the symbols in an alphabetic or syllabic system or 50-100 characters or compounds in a character writing system. Spelling and representation of symbols (letters, syllables, characters) may be partially correct.
Intermediate-Low	Able to meet limited practical writing needs. Can write short messages, postcards, and take down simple notes, such as telephone messages. Can create statements or questions within the scope of limited language experience. Material produced consists of recombinations of learned vocabulary and structures into simple sentences on very familiar topics. Language is inadequate to express in writing anything but elementary needs. Frequent errors in grammar, vocabulary, punctuation, spelling and in formation of nonalphabetic symbols, but writing can be understood by natives used to the writing of nonnatives.
Intermediate-Mid	Able to meet a number of practical writing needs. Can write short, simple letters. Content involves personal preferences, daily routine, everyday events, and other topics grounded in personal experience. Can express present time or at least one other time frame or aspect consistently, e.g., nonpast, habitual, imperfective. Evidence of control of the syntax of noncomplex sentences and basic inflectional morphology, such as declensions and conjugation. Writing tends to be a loose collection of sentences or sentence fragments on a given topic and provides little evidence of conscious organization. Can be understood by natives used to the writing of nonnatives.
Intermediate-High	Able to meet most practical writing needs and limited social demands. Can take notes in some detail on familiar topics and respond in writing to personal questions. Can write simple letters, brief synopses and paraphrases, summaries of biographical data, work and school experience. In those languages relying primarily on content words and time expressions to express time, tense, or aspect, some precision is displayed; where tense and/or aspect is expressed through verbal inflection, forms are produced rather consistently, but not always accurately. An ability to describe and narrate in paragraphs is emerging. Rarely uses basic cohesive elements, such as pronominal substitutions or synonyms in written discourse. Writing, though faulty, is generally comprehensible to natives used to the writing of nonnatives.

Advanced	Able to write routine social correspondence and join sentences in simple discourse of at least several paragraphs in length on familiar topics. Can write simple social correspondence, take notes, write cohesive summaries and resumes, as well as narratives and descriptions of a factual nature. Has sufficient writing vocabulary to express self simply with some circumlocution. May still make errors in punctuation, spelling, or the formation of nonalphabetic symbols. Good control of the morphology and the most frequently used syntactic structures, e.g., common word order patterns, coordination, subordination, but makes frequent errors in production complex sentences. Uses a limited number of cohesive devices, such as pronouns, accurately. Writing may resemble literal translations from the native language, but a sense of organization (rhetorical structure) is emerging. Writing is understandable to natives not used to the writing of nonnatives.
Advanced-Plus	Able to write about a variety of topics with significant precision and in detail. Can write most social and informal business correspondence. Can describe and narrate personal experiences fully but has difficulty supporting points of view in written discourse. Can write about the concrete aspects of topics relating to particular interests and special fields of competence. Often shows remarkable fluency and ease of expression, but under time constraints and pressure writing may be inaccurate. Generally strong in either grammar or vocabulary, but in both. Weakness and unevenness is one of the foregoing or in spelling or character writing formation may result in occasional miscommunication. Some misuse of vocabulary may still be evident. Style may still be obviously foreign.
Superior	Able to express self effectively in most formal and informal writing on practical, social and professional topics. Can write most types of correspondence, such as memos as well as social and business letters, and short research papers and statements of positions in areas of special interest or in special fields. Good control of a full range of structures, spelling or nonalphabetic symbol production, and a wide general vocabulary allow the writer to hypothesize and present arguments or points of view accurately and effectively. An underlying organization, such as chronological ordering, logical ordering, cause and effect, comparison, and thematic development is strongly evident, although not thoroughly executed and/or not totally reflecting target language patterns. Although sensitive to differences in formal and informal style, still may not tailor writing precisely to a variety of purposes and/or readers. Errors in writing rarely disturb natives or cause miscommunication.

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SOCIAL STUDIES

Standard Course of Study and Grade Level Competencies

K-12

SOCIAL STUDIES

Public Schools of North Carolina
Department of Public Instruction

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The involvement of the educational community in the revising of the social studies curriculum into a framework format makes it a document that is flexible enough to allow teachers to use their expertise and creativity as they address designated goals and objectives while meeting individual needs of the children of North Carolina.

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Social Studies Overview

Introduction

The social studies curriculum has been revised. A new *Social Studies Standard Course of Study Framework* and a support document entitled *Teacher Handbook – Social Studies K-12* have been developed. The goals and objectives of the framework closely parallel the national social studies curriculum standards and also reflect the national content standards for history, geography, civics and government, and economics. They provide guidance for implementing the strands for each of the social science disciplines in the framework – history, geography, economics, political science, and anthropology/psychology/sociology.

Process

The social studies consultants led the revision and reformatting of the social studies curriculum. They conducted review sessions across the state. Teachers, curriculum specialists, and social studies teacher educators from colleges and universities reviewed the draft documents. As each group gave feedback, revisions were made. In addition, draft copies were sent to curriculum specialists, social studies department chairs and lead teachers. These individuals conducted small-group review sessions, which included parents. These sessions yielded feedback on each grade level and course, and gave all districts in the state an opportunity to respond.

Purpose

The *Social Studies Standard Course of Study Framework* and *Teacher Handbook – Social Studies K-12* are designed to give direction and support to teachers and curriculum specialists as they plan for instructional design and delivery. The framework is designed to meet the statutory requirements of the state curriculum. It specifies the "what," or content to be taught, while allowing flexibility at the local level in deciding "how," or the strategies for instruction.

Goals

The goals for the curriculum review were the following:

- to elaborate clearly the essential content and skills of the social studies curriculum K-12
- to make the disciplines and skills competencies more prominent
- to maintain the integrity of the major concepts in the curriculum and the current content sequence K-12.

Features

The social studies framework and handbook emphasize the following:

- integration of knowledge, skills, and attitudes within and across the disciplines, with increased emphasis on reading, writing, and mathematics
- preparation for citizenship, contributing to work force preparedness
- critical and creative thinking processes, in particular, problem solving, decision making, and planning
- interactive, participatory learning which promotes the development of constructive interpersonal relationships.
- correlation to national content standards:
  - National Standards for Civics and Government
  - National Standards for Geography
  - National Standards for History
  - National Standards in Economics

Social Studies Overview

- correlation to national curriculum standards: (see page 6-14)
  - National Social Studies Standards – Ten thematic strands:

I. Culture
II. Time, Continuity, and Change
III. People, Places, Environments
IV. Individual Development and Identity
V. Individuals, Groups, and Institutions
VI. Power, Authority, and Governance
VII. Production, Distribution, and Consumption
VIII. Science, Technology, and Society
IX. Global Connections
X. Civic Ideals and Practice

Expectations of Excellence: Curriculum Standards for Social Studies

The framework and teacher handbook outline goals and objectives for each grade K-12. The content sequence chart is intended to emphasize the following:

- the increasing sophistication of content for each level
- the logical nature of the study of regions and places
- the contributions of the major disciplines to the social studies sequence.

Grade span introductions in the framework provide an overview of the suggested content scope and sequence according to the following levels:

- primary (K-3)
- elementary (4-5)
- middle (6-8)
- secondary (9-12).

Social Studies Overview

In addition to grade span introductions, the teacher handbook also contains introductions or descriptions for each grade level or course.
These descriptions further support the sequence chart and grade span introductions by suggesting the scope of the level or course and how it might be organized. These features give direction to teachers and curriculum specialists as they plan for instruction.

For grades K-7, the goals and objectives are clustered by and labeled according to the social science disciplines as follows:

- anthropology/psychology/sociology
- economics
- geography
- history
- political science.

This organizational pattern emphasizes that the discipline strands are present at each grade level. Beginning with grade eight and continuing at the secondary level, each course, such as United States History or World Cultures, relates to one or more of these disciplines. Goals and objectives are also provided for each of the elective courses at the secondary level. For the courses in grades eight through twelve, labels or headings for each goal indicate specific topics, such as Scarcity or Foundations of Culture, or time periods or eras, such as Colonial-Revolutionary Era or World War II.

Skills

The social studies framework identifies four skills which are to be taught within the context of applying knowledge. Through a sequentially developed K-12 program, students are given numerous opportunities to practice, refine, and apply the following broad skills:

- acquisition of information from a variety of sources
- use of information for problem solving, decision making, and planning
- development of skills in interpersonal relationships and social participation
- promotion of civic participation.

In the framework, the skills narrative identifies an instructional model for the natural integration of content and skills. For each of the four skills, further elaboration and specific examples are provided. Descriptions of how the skills may be applied at each level, primary and elementary, middle, and secondary, are also provided in the skill narrative of the framework. In the teacher handbook, skills application examples are suggested for each grade and course to illustrate how the skills might be emphasized at that particular level.

Social Studies Overview

As with the content goals and objectives, the four skills of the social studies curriculum are highly correlated with essential skills identified in the national social studies curriculum standards and with skills emphasized in the national content standards for civics and government, geography, and economics.

The following are important reminders to teachers concerning how skills should be viewed and taught in the social studies curriculum.

Reminders About Skills

Skills should...	**Skills should not...**
be an **integral component** of the curriculum	be viewed as an **add-on** component
be emphasized **equally** in **all grade levels** and **courses K–12**	be viewed as the responsibility of **primary** or **elementary** level instruction only
reflect **natural integration** of content and skills	be taught in **isolation**

Equally important are the following reminders about the skill application examples which are provided for each grade level and course in the teacher handbook. These reminders serve to dispel any misconceptions that might arise concerning the intended purpose and use of the examples.

Reminders About Skill Application Examples

Skills application examples should... **not...**	**Skills application examples should**
be used to **elaborate** on the skills narratives on pages 18-23 examples	be viewed as a **finite, inclusive** set of
be viewed as **examples** of how skills can be **applied to content**	be viewed as **separate** objectives or mandated objectives **in addition** to content objectives
be viewed as merely **suggested** activities	be viewed as **required** activities

Use of the Social Studies Standard Course of Study Framework and Teacher Handbook – Social Studies K-12

Definitions

The *Social Studies Standard Course of Study Framework* identifies what students are expected to know and be able to do as a result of a balanced and effective social studies program. The *Teacher Handbook - Social Studies K-12* provides focus and direction for instructional design. It allows for flexibility and creativity in instructional delivery.

Handbook Purpose

Neither the *Framework* nor the *Handbook* are intended to be stand-alone guides for instruction. Rather, these documents define the curriculum in very broad terms and are designed as beginning points for planning. The *Handbook* contains everything in the *Framework* and provides additional information intended to help teachers as they plan and organize for instruction. If teachers have copies of the *Handbook*, they will not need the *Standard Course of Study Framework*. Support documents such as *Planning for Social Studies Instruction* can assist teachers in fully implementing the curriculum as it designed to be used.

Caution

The curriculum goals and objectives should provide the scope of a grade or course, rather than content of a textbook or some other instructional resource.

Essential Components

Before beginning instructional planning, all teachers regardless of grade or course assignment, need to understand the following components of the *Framework*:

- Social Studies Overview
- Purpose and Philosophy
- Framework Goals
- Rationale for Social Studies
- Content Overview: The Role of Disciplines in the Curriculum
- Rationale for Content Organization
- Recommended Content Sequence
- Skills in the Social Studies Curriculum
- Introductions to Grade Spans
- Grade or Course Overviews
- Goals and Objectives
- Skill Application Examples.

Caution

These components provide a foundation and outline the scope of the K-12 social studies program. In order for teachers to have a context for their grade or course, it is essential that the first twenty-five pages of the framework be provided along with the goals, objectives, and skill application examples for their specific grade or course. Attempts to use the goals and objectives in isolation may result in a fragmented approach to instructional design and delivery.

Use of the Social Studies Standard Course of Study Framework and Teacher Handbook - Social Studies K-12

Curriculum Articulation

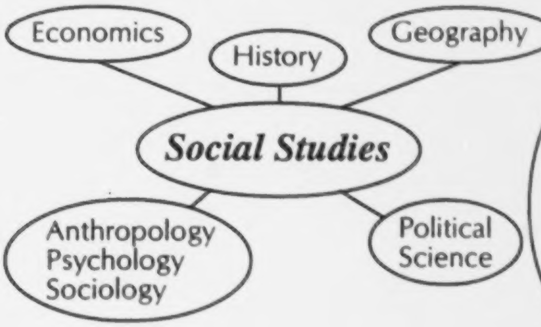
It is **equally important** for **all teachers** to have a basic understanding of the content that **precedes** and **follows** their grade or course. Such an understanding is necessary in order for them to be able to convey the **interconnective nature** of the curriculum to students.

Primary Level

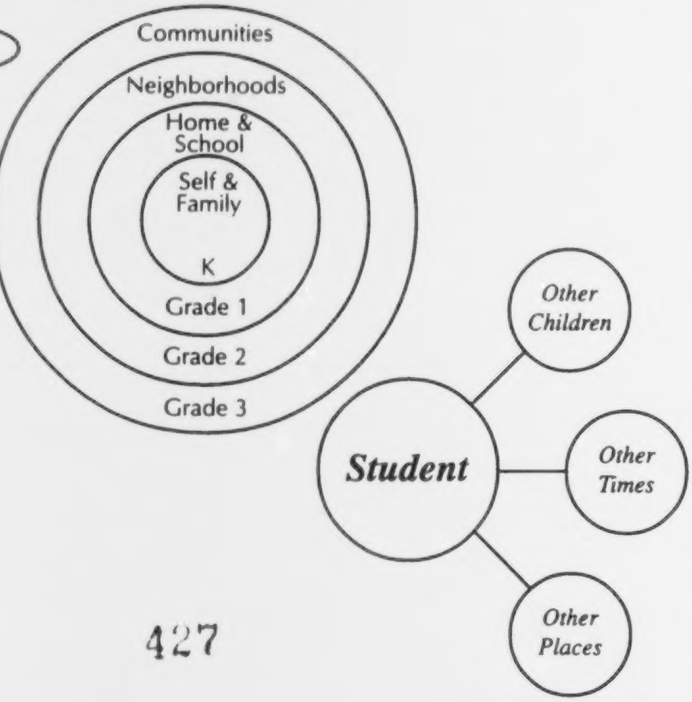
The presentation of the curriculum follows a clearly defined and deliberate pattern. The characteristics of the **primary level program (K-3)** include the following:

- **an interdisciplinary approach** - students are introduced to important concepts and generalizations from history and the social science disciplines
- **focus on extending students' perspectives**
    - studies begin with immediate surroundings familiar to children and proceed deliberately to children and families, homes and schools, neighborhoods and communities in other environments
    - students build increasingly sophisticated concepts and generalizations as they enhance their ability to examine the perspectives of other children in **other times** and in **other places**
- **developmental appropriateness** - although young children have little understanding of formal chronology, it is important to include "then and now" concepts and content so that family history, local history, celebration of holidays, and selected historical case studies can be understood.

Interdisciplinary Approach


Economics
History
Geography
Social Studies
Anthropology
Psychology
Sociology
Political Science

Extending Students' Perspectives


Communities
Neighborhoods
Home & School
Self & Family
K
Grade 1
Grade 2
Grade 3
Student
Other Children
Other Times
Other Places

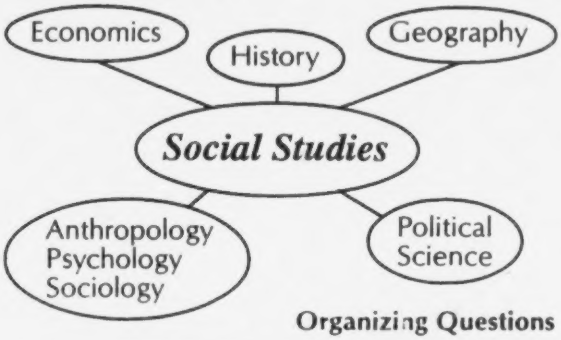
Use of the Social Studies Standard Course of Study Framework and Teacher Handbook – Social Studies K-12

Elementary/ Middle Level

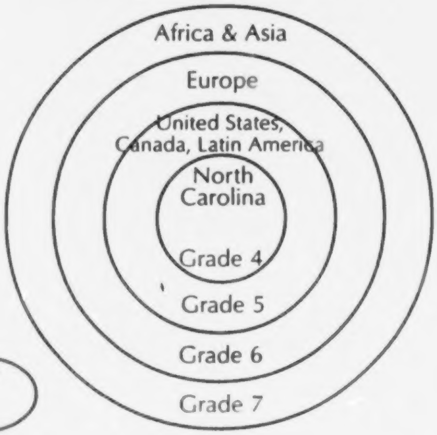
The **elementary** and **middle level (grades 4-7)** programs are characterized as follows:

- **the extending students' perspectives approach** is continued from the primary level
- **by the end of grade seven**, students are systematically introduced to the world
- **organizing questions**, based on the social science disciplines, provide students a framework for studying and analyzing **regions**
- **an interdisciplinary approach** continues to be used; however, **cultural geography** is emphasized at this level.

Interdisciplinary Approach


Economics
History
Geography
Social Studies
Anthropology
Psychology
Sociology
Political
Science

Extending Students' Perspectives


Africa & Asia
Europe
United States,
Canada, Latin America
North
Carolina
Grade 4
Grade 5
Grade 6
Grade 7

Organizing Questions

Who are the people and what are their beliefs and values?
Focus: Anthropology/Psychology/Sociology Goals 1 & 2

What is the environment in which the people live?
Focus: Geography Goals 3,4,5 & 6

How is the society organized?
Focus: Political Science Goals 7 & 8

How do the people of this society make a living?
Focus: Economics Goals 9 & 10

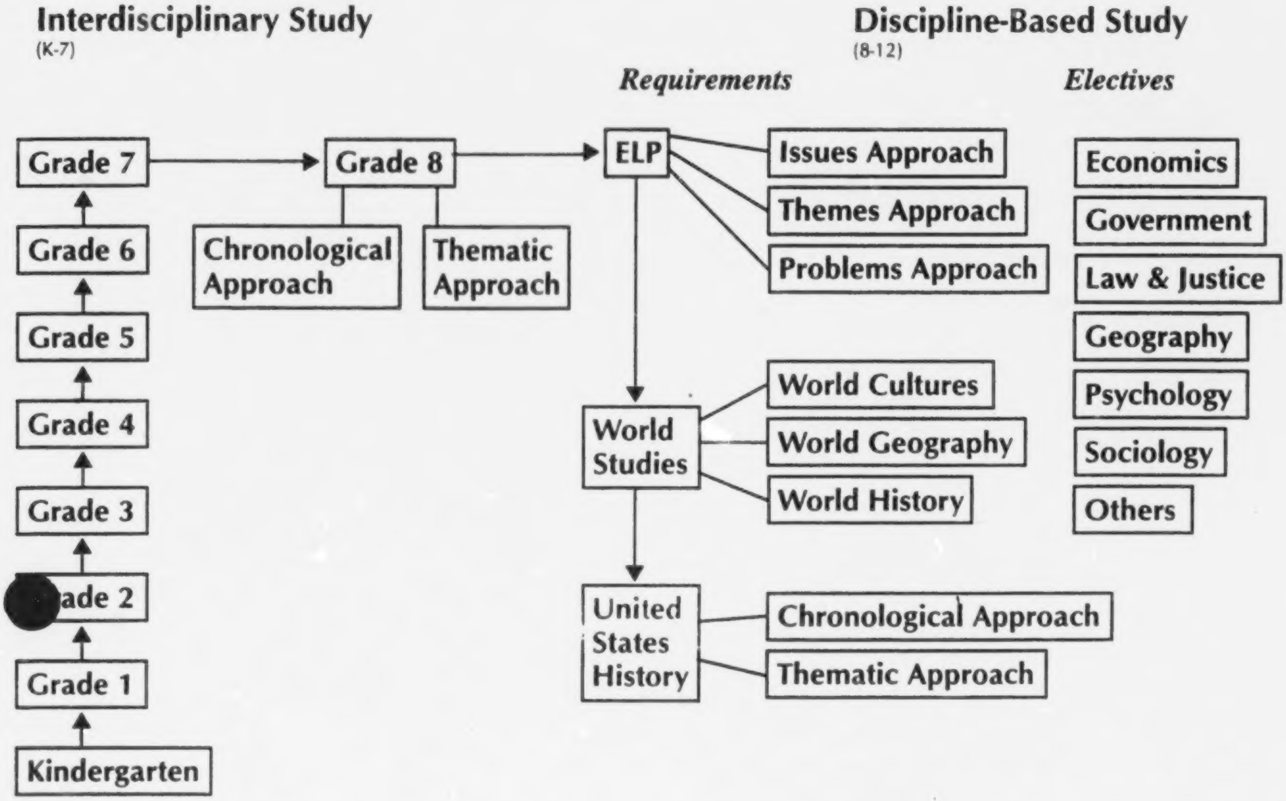
How has this society changed over time?
Focus: History Goals 11 & 12

High School

The **secondary level** program is characterized as follows:

- **beginning in grade eight** and **continuing through the secondary level**, **the course content is based in one or more disciplines**
- while courses at this level focus more on **one discipline**, such as history, **other disciplines** are **integrated** in the courses
- the understanding of the **interconnectiveness of major ideas and concepts** enhances the student's total perspective at this level
- the **three graduation requirements** at the secondary level are an **extension of the K-7 program**
- they provide a **core of social studies content** that can be enhanced and further developed through the **study of electives**.

Use of the Social Studies Standard Course of Study Framework and Teacher Handbook – Social Studies K-12


Interdisciplinary Study
(K-7)
Discipline-Based Study
(8-12)
Requirements
Electives
Grade 7
Grade 8
ELP
Issues Approach
Themes Approach
Problems Approach
Grade 6
Chronological Approach
Thematic Approach
Grade 5
Grade 4
Grade 3
ade 2
Grade 1
Kindergarten
World Studies
World Cultures
World Geography
World History
United States History
Chronological Approach
Thematic Approach
Economics
Government
Law & Justice
Geography
Psychology
Sociology
Others

Recommended Sequence

The secondary level content sequence outlined in the framework is **recommended, not required**; however, there is a **solid rationale** for that specific suggested sequence. Concepts and generalizations developed as students proceed from grade eight to ELP to world studies contribute to more in-depth study of United States history.

Local systems or individual schools may choose to vary the sequence for equally compelling reasons; however, consideration should be given to the impact of these changes on subsequent courses. The integrity of the content can be maintained while variations are made to accommodate students' needs, instructional approaches, and scheduling decisions.

Purpose and Philosophy

What is Social Studies?

Social Studies Defined

In 1992, the Board of Directors of National Council for the Social Studies, the primary membership organization for social studies educators, adopted the following definition: *Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences.* ***(The primary purpose of social studies is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world.)***

NC Framework

The goals and objectives of the *Social Studies Standard Course of Study Framework* closely parallel the national social studies curriculum standards. The national content standards for history, geography, civics and government, and economics support the North Carolina framework. They provide guidance for implementing the strands for each discipline in the framework. The North Carolina framework is designed to meet statutory requirements of the state curriculum and to provide a balanced and effective social studies program for all students.

Nature of Social Studies

Social studies is taught in kindergarten through grade 12 in schools across the nation. As a field of study, social studies may be more difficult to define than is a single discipline such as history or geography, precisely because it is multidisciplinary and interdisciplinary and because it is sometimes taught in one class (perhaps called "social studies") and sometimes in separate discipline-based classes within a department of social studies. Two main characteristics, however, distinguish social studies as a field of study: it is designed to promote civic competence; and it is integrative, incorporating many fields of endeavor.

Civic Competence

Social studies programs have as a major purpose the promotion of civic competence – which is the knowledge, skills, and attitudes required of students to be able to assume "the office of citizen..." in our democratic republic. Although civic competence is not the only responsibility of social studies, nor is it exclusive to the field, it is more central to social studies than any other subject area in the schools.

Integration of Knowledge, Skills, and Attitudes

K-12 social studies programs integrate knowledge, skills, and attitudes within and across disciplines. Integrated social studies programs across the nation take many forms, varying in the amount and form of disciplinary integration. At primary and elementary levels, children often learn through opportunities that are highly integrated across several disciplines. These frequently take the form of units constructed around themes. For example, teachers using the theme "time, continuity, and change" would likely engage young learners in studies using history, science, and language arts.

As students proceed to middle and higher levels, social studies programs may continue to be highly integrated and, in some cases, planned by interdisciplinary teams of teachers (for example, social studies, science, mathematics, humanities). Alternatively, programs may be planned as interdisciplinary courses or more exclusively linked to specific disciplines (for example, a history course that also draws from geography, economics, political science).

Purpose and Philosophy

Disciplines Provide Perspective

Social studies programs help students construct a knowledge base and attitudes drawn from academic disciplines as specialized ways of viewing reality. Each discipline begins from a specific perspective and applies unique "processes for knowing" to the study of reality. History, for instance, uses the perspective of time to explore causes and effects of events in the past. Political science, on the other hand, uses the perspective of political institutions to explore structures and processes of governing.

It is important for students in social studies programs to begin to understand, appreciate, and apply knowledge, processes, and attitudes from academic disciplines. In addition, discipline-based learning draws simultaneously from several disciplines in clarifying specific concepts.

Changing Nature of Knowledge

Social studies programs reflect the changing nature of knowledge, fostering entirely new and highly integrated approaches to resolving issues of significance to humanity. Over the last fifty years, the scholarly community has begun to rethink disciplinary boundaries and encourage more integration across disciplines. This process has been spurred by pressures such as the following:

- Social issues, such as poverty, crime, and public health, are increasingly understood to transcend the boundaries of disciplines, cultures, and nations. As these issues grow increasingly complex, the work to develop solutions demands an increasingly integrated view of scholarly domains and of the world itself.
- Many scholars now define themselves by the issues and problems they address and use several disciplines to inform their work. Entirely new departments and programs reflect this development. Academic programs in American Studies, African-American Studies, Biotechnology, and Medical Ethics, for example, draw on multiple disciplines and their processes to address the needs of humanity.
- Technology provides increasingly easy access to data bases that are cross-disciplinary and multidisciplinary as well as to scholarly works.
- Scholars increasingly consider themselves to be members of the international academic community and share findings regularly across intellectual and geographic boundaries.

The Importance of High Expectations

The more accurately the K-12 social studies program addresses the contemporary conditions of real life and of academic scholarship, the more likely such a program is to help students develop a deeper understanding of how to know, how to apply what they know, and how to participate in building a future.

(Adapted from: ***Expectations for Excellence: Curriculum Standards for Social Studies*****)**

Framework Goals

Balanced K-12 Curriculum

A balanced and effective K-12 social studies program prepares students to be active, informed, and responsible citizens. Social studies increases students' awareness of their world, their nation, and their state, giving them fundamental understanding of their own society and others both past and present. Students acquire and perfect skills of individual and group inquiry and examine a broad range of peoples and cultures. Students gain from social studies programs the knowledge, skills, attitudes, and values that enable them to be effective problem-solvers, good decision-makers, and wise planners. They are prepared, as a result of their social studies education, to deal with present, recurring, and unforeseen problems.

Overall Goals

Students successfully completing a balanced and effective social studies program:

- possess civic understanding and accept their responsibilities as citizens in a democratic society
- are proficient in the skills of information acquisition; information use for problem-solving, decision-making, and planning; interpersonal relationships and social participation; and civic participation
- possess the ability to apply concepts, generalizations, and theories to analyze and explain:
    - the structure, function, and operations of the economic, social, and political institutions of the United States and other societies and the economic, social, and political behavior of people
    - the historical development and unique characteristics of past and present societies
    - persistent issues and problems
    - basic geographic concepts
- demonstrate values consistent with the fundamental tenets of democracy
- exhibit constructive attitudes toward change, conflict, diversity, and uncertainty
- demonstrate concern for others and for the environment

Core Curriculum

Social studies should be included in the program of study for all students. Social studies provides a context for students to use the skills introduced in other areas as they learn to understand and practice the art of living and working together in a productive and constructive manner. Social studies provides a framework through which essential skills and other subjects may be integrated.

4:2

Rationale for Social Studies in the School Curriculum

Historical Basis for Civic Education

Beginning with a 1642 law in Massachusetts that called for an understanding of the "capitall lawes of country" and continuing to this day, citizenship education has been a primary responsibility of the public school system. Moses Mather wrote in 1775 that "the strength and spring of every free government is the virtue of the people; virtue grows on knowledge, and knowledge on education." Indeed, the Massachusetts Constitution of 1780 declared that "wisdom and knowledge" were "necessary for the preservation of…rights and liberties." North Carolina's founding fathers had displayed that same emphasis on education four years earlier when they included an article on that very subject in our state's first constitution.

Thomas Jefferson stated this responsibility:

> *If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be…I know of no safe repository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education.*

Rights and Responsibilities

Rights imply responsibilities, and the preservation of rights suggests the exercise of responsibilities. Yet, if citizens cease to know either the breadth of their liberties or the limits of their government, the preservation of the great American experiment begun in 1776 must become far less secure. Our notion of literacy must extend beyond fundamentals as traditionally conceived. There must exist an essential educational ingredient that encompasses civic education, a body of knowledge that is addressed in social studies. Although many other institutions, forces, and experiences do educate, the only place where this knowledge will be taught to everyone is in the public schools.

Cultural Transmission

The nature of what is to be taught under the rubric of civic education has changed, is changing, and will remain a subject for debate. Educating for effective citizenship had a fairly limited and specific meaning when the nation was young, the economy agrarian, and the population fairly homogeneous. As the nation has grown, become less isolated, become more pluralistic and has been affected by advancing technology, civic education has become more complex. One mission of social studies continues to be the transmission of culture.

Dynamic Context

Today it is possible to know more about our world faster and easier than ever before. It is the task of social studies education to make sense of this changing knowledge of our world by placing it in perspective.

Since we cannot predict what specific knowledge and behavior will be demanded in the future, we must concentrate on educating citizens who will be able to solve problems that cannot presently be foreseen. Tomorrow's citizens must effectively analyze information, resolve problems, and make informed choices. Since the future is uncertain, it is necessary to prepare students to be scholarly, exercise leadership, and support democratic ideals.

Rationale for Social Studies in the School Curriculum

International Perspective

In the education of citizens, our schools cannot safely ignore the increasing interdependence and diversity of the world. Our own economic and political well-being is inextricably bound up in the well-being of the world. We must educate citizens to cope with the reality that events across vast oceans can and do significantly influence what happens at home.

Knowledge of people distant from us in time and space is not only instructive but imperative since we are thoroughly dependent on other people. All our technological advances make the world an even smaller place, in which the power of the individual for good or evil is immensely increased. More than ever, societies of the future will be dependent upon caring, responsible citizens who are willing and able to think and act individually and collectively and who recognize that all people share more commonalities than differences.

Civic Education

Within our schools, social studies has traditionally accepted the dominant burden of preparing young people to inherit the right and the responsibility of effective citizenship. The teachings of the disciplines that comprise the social studies contribute distinctively to civic education.

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Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

History

The study of **HISTORY** places human beings and their activities in time. A knowledge of history cannot enable one to predict the future, but it can reveal how other people in other times have dealt with problems and the success or failure of their solutions. It is unique in that it teaches the impacts of the past in shaping the world of today and in determining the options open to us. History can teach both the burdens the past has placed on us and the opportunities these burdens can provide.

Social studies programs should include experiences that provide for the study of the ways human beings view themselves in and over time.

Human beings seek to understand their historical roots and to locate themselves in time. Such understanding involves knowing what things were like in the past and how things change and develop. Analyzing patterns and relationships within and among world cultures, such as economic competition and interdependence, age-old ethnic enmities, political and military alliances, and others, helps learners carefully examine policy alternatives that have both national and global implications. Knowing how to interpret and reconstruct the past allows one to develop a historical perspective and to answer questions such as:

Essential Questions

- Who am I?
- What happened in the past?
- How am I connected to those in the past?
- How has the world changed and how might it change in the future?
- Why does our personal sense of relatedness to the past change?
- How can the perspective we have about our own life experiences be viewed as part of the larger human story across time?
- How do our personal stories reflect varying points of view and inform contemporary ideas and actions?
- What can we learn from the past about how new technologies result in broader, unanticipated social change?
- How can we cope with the ever-increasing pace of change?
- Should historical personalities and events be judged by current norms?

Primary/Elementary

Learners in early grades gain experience with sequencing to establish a sense of order and time. They enjoy hearing stories of the recent past as well as of long ago. In addition, they begin to recognize that individuals may hold different views about the past and to understand the linkages between human decisions and consequences. Thus, the foundation is laid for the development of historical knowledge, skills, and values. From history (their own and others'), they can construct examples of how technologies such as the wheel, the stirrup, and the transistor radio altered the course of history.

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

History continued

Middle

In the middle grades, students continue to expand their understanding of the past and of historical concepts and inquiry. They begin to understand and appreciate differences in historical perspectives, recognizing that interpretations are influenced by individual experiences, societal values, and cultural traditions. They will find that science and technology bring changes that surprise us and even challenge our beliefs, as in the case of discoveries and their applications related to the world.

High School

High school students engage in more sophisticated analysis and reconstruction of the past, examining its relationship to the present and extrapolating into the future. They integrate individual stories about people, events, and situations to form a broader conception in which continuity and change are linked in time and across cultures. At the high school level, students are able to think systematically about personal, national, and global decisions, interactions, and consequences, including addressing critical issues such as peace, human rights, trade, and global ecology. Students also learn to draw on their knowledge of history to make informed choices and decisions in the present.

(From *Expectations of Excellence: Curriculum Standards for Social Studies,* Strands: I. Culture; II. Time, Continuity and Change; VIII. Science, Society, and Technology; and IX. Global Connections)

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Geography

The study of **GEOGRAPHY** gives students a spatial perspective. The goal of geography is to produce a geographically-informed person who sees meaning in the arrangement of things in space and applies a spatial perspective to life situations.

Social studies programs should include experiences that provide for the study of people, places, and environments.

Technological advances connect students at all levels to the world beyond their personal locations. The study of people, places, and human-environment interactions assists learners as they create their spatial views and geographic perspectives of the world. Analysis of tensions between national interests and global priorities contributes to the development of possible solutions to persistent and emerging global issues in many fields: health care, economic development, environmental quality, universal human rights, and others. Today's social, cultural, economic, and civic demands on individuals mean that students will need the knowledge, skills, and understanding to ask and answer questions such as:

Essential Questions

- What are physical and human characteristics of places?
- Why are things located where they are?
- What is the significance of the location of things?
- What patterns are reflected in the groupings of things?
- What do we mean by region?
- How do landforms change?
- What implications do these changes have for people?
- How do humans modify the environment?
- What geographic tools are needed in a given situation?
- How do physical systems affect human systems?
- How are important resources distributed on the earth's surface?

This area of study helps learners make informed and critical decisions about the relationship between human beings and their environment.

Primary/Elementary

In the early grades, young learners draw upon immediate personal experiences as a basis for exploring geographic concepts and skills. They also express interest in things distant and unfamiliar and have concern for the use and abuse of the physical environment. They can study how basic technologies such as ships, automobiles, and airplanes have evolved and how we have employed technology such as air conditioning, dams, and irrigation to modify our physical environment. Through exposure to various media and first-hand experiences, young learners become aware of and are affected by events on a global scale.

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Geography continued

Middle

During the middle school years, students relate their personal experiences to happenings in other environmental contexts. Appropriate experiences will encourage increasingly abstract thought as students use data and apply skills in analyzing human behavior in relation to its physical and cultural environment. In the middle years, learners can initiate analysis of the interactions among states and nations and their cultural complexities as they respond to global events and changes.

High School

Students in high school are able to apply geographic understanding across a broad range of fields, including the fine arts, sciences, and humanities. Geographic concepts become central to learners' comprehension of global connections as they expand their knowledge of diverse cultures, both historical and contemporary. The importance of core geographic themes to public policy is recognized and should be explored as students address issues of domestic and international significance.

(From *Expectations of Excellence: Curriculum Standards for Social Studies*, Strands: I. Culture; III. People, Places, and Environments; VIII. Science, Society, and Technology; and IX. Global Connections)

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Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Economics

ECONOMICS is the study of how people cope with their environment and each other as they try to satisfy their needs and wants.

Social studies programs should include experiences that provide for the study of how people organize for the production, distribution, and consumption of goods and services.

People have unlimited needs and wants, but they live in a world which surrounds them with limits. A fundamental condition of life is that there is not enough time, money, energy, nor other resources to satisfy everyone's needs and wants. To make the best use of scarce resources, both individuals and groups must choose wisely among the nearly limitless alternatives available to them.

Economics can be thought of as responsible decision making, by choosing among alternatives. Choices (decisions) have consequences and some choices lead to better consequences than others.

The purpose of economics is to provide practical tools for evaluating alternatives before making a decision. A good economic education should also help one develop the disposition and the ability for making decisions based on reason rather than some of the other things which seem to influence decisions such as impulse or peer presure. Doing so helps individuals and groups make the most out of life.

As they study economics, students should learn the following:

- to prioritize needs and wants
- to allocate resources to satisfy needs and wants
- to develop their own human capital and other resources
- about the world of work
- the relationship between the quality of life in a community and the vitality of the economy
- to promote the responsible use of community resources
- the responsibilities and the opportunities offered by a private enterprise economic system
- to understand and support an appropriate role for government in economic affairs.

Essential Questions

People have wants that often exceed the limited resources available to them. As a result, a variety of ways have been invented to decide upon answers to fundamental questions:

- What is scarcity?
- Why does scarcity make economic choice necessary?
- Can the free market solve the problems of society?
- What are producers and consumers?
- What is economic interdependence?
- What economic choices must every society make?
- What role should the government play in our economy?
- Are business-cycle fluctuations inevitable?

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Economics continued

Essential Questions

- Are taxes necessary?
- How are prices determined in a competitive market?
- What is to be produced?
- How is production to be organized?
- How are goods and services to be distributed?
- What is the most effective allocation of the factors of production (land, labor, capital, and management)?
- How free should international trade be?

Unequal distribution of resources necessitates systems of exchange, including trade, to improve the well-being of the economy, while the role of government in economic policy-making varies over time and from place to place. Increasingly these decisions are global in scope and require systematic study of an interdependent world economy and the role of technology in economic decision-making.

Primary/Elementary

Instruction in economics should begin early to help very young students learn to understand and use a basic economics vocabulary and elementary economic principles. They can distinguish between needs and wants and can prioritize each. Young learners begin to see the consequences of their individual and group decisions. They are also able to develop the habit of taking a reasoned and responsible approach to decision-making.

Middle

Middle school students should be able to apply economic concepts and principles in a wide array of real and hypothetical circumstances. In this way they should be able to analyze relatively simple situations and issues and then predict outcomes and prescribe policies. They should also be able to defend their position on various issues which have some economic content.

High School

High school economics should build on what students learn in middle school. The questions remain much the same but the answers get more sophisticated. Because these older students are able to deal with greater levels of abstraction, they should be able to analyze and predict with greater degrees of sophistication. High school economics should include perspectives from the other social sciences, especially history, political science, and geography.

(From *Expectations of Excellence: Curriculum Standards for Social Studies,* Strands: I. Culture; VII. Production, Distribution, and Consumption; and VIII. Science, Society, and Technology)

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Political Science

Knowledge of **POLITICAL SCIENCE** includes understanding political institutions: why they exist, how they function, and how each institution relates to all others. Only with this knowledge can citizens participate effectively and creatively in their political/legal system.

Social studies programs should include experiences that provide for the study of how people create and change structures of power, authority, governance. and the ideals, principles, and practices of citizenship in a democratic republic.

Understanding the historical development of structures of power, authority, and governance and their evolving functions in contemporary U.S. society, as well as in other parts of the world, is essential for developing civic competence. An understanding of civic ideals and practices of citizenship is critical to full participation in society and is a central purpose of the social studies. All people have a stake in examining civic ideals and practices across time and in diverse societies as well as at home and in determining how to close the gap between present practices and the ideals upon which our democratic republic is based.

Essential Questions

In exploring this theme, students confront questions such as:

- What is power?
- What forms does it take?
- Who holds it?
- How is it gained, used, and justified? What is legitimate authority?
- How are governments created, structured, maintained, and changed?
- How can we keep government responsive to its citizens' needs and interests?
- How can individual rights be protected within the context of majority rule?
- What is civic participation and how can individuals be involved?
- How has the meaning of citizenship evolved?
- What is the balance between rights and responsibilities?
- What is the role of the citizen in the community and the nation, and as a member of the world community?
- How can individuals make a positive difference?
- How can we manage technology so that the greatest number of people benefit from it?
- How can conflicts be resolved justly and fairly?

By examining the purposes and characteristics of various governance systems, learners develop an understanding of how groups and nations attempt to resolve conflicts and seek to establish order and security. Through study of the dynamic relationships among individual rights and responsibilities, the needs of social groups, and concepts of a just society, learners become more effective problem-solvers and decision-makers when addressing the persistent issues and social problems encountered in public life. They do so by applying concepts and methods of political science and law.

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Political Science continued

Primary/Elementary	Learners in the early grades explore their natural and developing sense of fairness and order as they experience relationships with others. They develop an increasingly comprehensive awareness of rights and responsibilities in specific contexts. Students are introduced to civic ideals and practices through activities such as helping to set classroom expectations, examining experiences in relation to ideals, and determining how to balance the needs of individuals and the group.
Middle	During the middle school years, these rights and responsibilities are applied in more complex contexts with emphasis on new applications. During these years, children also experience views of citizenship in other times and places through stories and drama. Students expand their abilities to analyze and evaluate the relationships between ideals and practice. They are able to see themselves taking civic roles in their communities.
High school	High school students develop their abilities in the use of abstract principles. They study the various systems that have been developed over the centuries to allocate and employ power and authority in the governing process. At every level, learners should have opportunities to apply their knowledge and skills and to participate in the workings of the various levels of power, authority, and governance. There should be opportunities to confront such issues as the protection of privacy in the age of computers, electronic surveillance, and medical technology with all their implications for longevity and quality of life and religious beliefs. Students increasingly recognize the rights and responsibilities of citizens in identifying societal needs, setting directions for public policies, and working to support both individual dignity and the common good. They can learn by experience how to participate in community service and political activities and how to use the democratic process to influence public policy.

(From *Expectations of Excellence: Curriculum Standards for Social Studies,* Strands: I. Culture; VI. Power, Authority, and Governance; VIII. Science, Society, and Technology; and X. Civic Ideals and Practices)

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Anthropology, Psychology, and Sociology

Governments and economies are operated by people. **ANTHROPOLOGY, PSYCHOLOGY,** and **SOCIOLOGY** offer distinctive perspectives on the behavior of individuals and the groups in which they live. These social sciences can provide citizens with useful tools for analyzing the motives and activities of individuals and groups they encounter.

Social studies programs should include experiences that provide for the study of culture, cultural diversity, individual development and identity, and interactions among individuals, groups, and institutions.

Personal identity is shaped by one's culture, by groups, and by institutional influences. Institutions such as schools, churches, families, government agencies, and the courts all play an integral role in our lives. These and other institutions exert enormous influence over us, yet institutions are no more than organizational embodiments to further the core social values of those who comprise them. Thus, it is important that students know how institutions are formed, what controls and influences them, how they control and influence individuals and culture, and how institutions can be maintained or changed.

Cultures are dynamic and ever-changing. Human beings create, learn, and adapt culture. Culture helps us to understand ourselves as both individuals and members of various groups. Human cultures exhibit both similarities and differences. We all, for example, have systems of beliefs, knowledge, values, and traditions. Each system also is unique. In a democratic and multicultural society, students need to understand multiple perspectives that derive from different cultural vantage points. This understanding will allow them to relate to people in our nation and throughout the world. Examination of various forms of human behavior enhances understanding of:

- the relationships among social norms and emerging personal identities
- the social processes that influence identity formation
- the ethical principles underlying individual action.

Essential Questions

The study of individuals, groups, and institutions prepares students to ask and answer questions such as:

- How do people learn?
- Why do people behave as they do?
- What influences how people learn, perceive, and grow?
- How do people meet their basic needs in a variety of contexts?
- What is the role of institutions in this and other societies?
- How are individuals influenced by institutions?
- How do institutions change?
- What is the role of individuals in institutional change?
- What are the common characteristics of different cultures?
- How do belief systems, such as religion or political ideals of the culture, influence the other parts of the culture?

Content Overview:

The Role of Disciplines in the K-12 Social Studies Curriculum

Anthropology, Psychology, and Sociology continued

Essential Questions

- How does the culture change to accommodate different ideas and beliefs?
- What does language tell us about the culture?
- How can we preserve our fundamental values and beliefs in a world that is rapidly becoming linked by technology?

Given the nature of individual development and our own cultural context, students need to be aware of the processes of learning, growth, and development at every level of their school experience.

Primary/Elementary

Young learners develop their personal identities in the context of families, peers, schools, and communities. Central to this development are the exploration, identification, and analysis of how individuals relate to others. Young children should be given opportunities to examine various institutions that affect their lives and influence their thinking. They should be assisted in recognizing the tensions that occur when the goals, values, and principles of two or more institutions or groups conflict. They should also have opportunities to explore ways in which institutions such as churches or health-care networks are created to respond to changing individual and group needs. During the early years of school, the exploration of the concepts of likenesses and differences in school subjects such as language arts, mathematics, science, music, and art makes the study of culture appropriate. Socially, the young learner is beginning to interact with other students, some of whom are like the student and some different; naturally, he or she wants to know more about others.

Middle

In the middle grades, issues of personal identity are refocused as the individual begins to explain self in relation to others in the society and culture. Middle school learners will benefit from varied experiences through which they examine the ways in which institutions change over time, promote social conformity, and influence culture. They should be encouraged to use this understanding to suggest ways to work through institutional change for the common good. In the middle grades, students begin to explore and ask questions about the nature of culture and specific aspects of culture, such as language and beliefs, and the influence of those aspects on human behavior.

High school

At the high school level, students need to encounter multiple opportunities to examine contemporary patterns of human behavior, using methods from the behavioral sciences to apply core concepts drawn from psychology, social psychology, sociology, and anthropology as they apply to individuals, societies, and cultures. High school students must understand the paradigms and traditions that undergird social and political institutions. They should be provided opportunities to examine, use, and add to the body of knowledge related to the behavioral sciences and social theory as it relates to the ways people and groups organize themselves around common needs, beliefs, and interests. As students progress through high school, they can understand and use complex cultural concepts such as adaptation, assimilation, acculturation, diffusion, and dissonance drawn from anthropology, sociology, and other disciplines to explain how culture and cultural systems function.

(From *Expectations of Excellence: Curriculum Standards for Social Studies*, Strands: I. Culture; IV. Individual Development and Identity; and V. Individuals, Groups, and Institutions)

Rationale for Content Organization

Sequence

The sequence for social studies as described on the following pages defines in general terms the subject matter to be emphasized in social studies at each level. This general description is intended to guide local curriculum coordinators as they select specific content for each level and course. Within these general guidelines, teachers and curriculum coordinators have a good deal of flexibility as they select topics and areas of study for their students. The recommended organizational pattern is both sequential and developmental. The sequence is recommended in order to avoid overlapping content between grade levels, lack of instructional time for recommended topics, and needless duplication in the use of instructional materials.

Legal Requirements

Several areas of study within the social studies are legally required. Public School Law **G.S. 115C-81** specifies subjects to be taught in North Carolina schools. Mentioned in the law are several areas of required study within the social studies. The areas are:

- Americanism
- the governments of North Carolina and the United States
- the free enterprise system, including its history, theory, foundation, and the manner in which it is actually practiced.
- **G.S. 115C-81** requires local boards of education to provide for teaching of "the nation's founding and related documents, which shall include at least the major principles in the Declaration of Independence, the United States Constitution and its amendments, and the most important of the Federalist Papers."
- **G.S. 115C-81** further directs the State Board of Education to include such documents in any curriculum-based tests developed and administered statewide and to establish curriculum content for this study.

State Board Requirements

The State Board of Education graduation requirements for social studies are:

- United States history
- Economic, Legal, and Political Systems in Action
- world studies.

North Carolina Social Studies
Recommended Content Sequence

Grade K	The Individual and Group Relationships
Grade 1	Home and School
Grade 2	Neighborhood and Local Community
Grade 3	Communities
Grade 4	North Carolina: The Land and Its People
Grade 5	The Western Hemisphere: The United States, Canada, and Latin America
Grade 6	The Eastern Hemisphere: Europe and Former Soviet Republics
Grade 7	The Eastern Hemisphere: Africa and Asia
Grade 8	North Carolina: The History of an American State
Grade 9-12	The Economic, Legal, and Political Systems in Action (ELP)
	World Studies
	United States History
	History and Social Science Electives

Note: The secondary level content sequence is recommended not mandated; however, there is a solid rationale for that specific suggested sequence. Concepts and generalizations developed as students proceed from grade eight to ELP to world studies contribute to more in-depth study of United States history.

Skills in the Social Studies Curriculum

Skills are taught within the context of applying knowledge. Authentic application activities promote the practice of skills without interrupting content flow. As students develop increasingly sophisticated and informed concepts and generalizations in social studies, they will be provided opportunities to develop and apply appropriate skills that will enhance critical-thinking processes.

Students will gain these skills through a sequentially developed K-12 program that gives them numerous opportunities to practice, refine, and apply four broad skills:

- acquisition of information from a variety of sources
- use of information for problem solving, decision making, and planning
- development of skills in interpersonal relationships and social participation
- promotion of civic participation.

As planning for integrating the teaching and use of social studies skills occurs, it is significant that essential skills have been identified also by the National Council for the Social Studies, in the National Standards for Civics and Government, in the National Geography Standards, and in the National Content Standards in Economics.

Three strands of essential skills are identified by the National Council for the Social Studies:

- acquiring information
- organizing and using information
- developing interpersonal relationships and social participation.

The National Standards for Civics and Government include intellectual and participatory skills. Within the National Geography Standards are the following skills:

- asking geographic questions
- acquiring geographic information
- organizing geographic information
- analyzing geographic information
- answering geographic questions.

Skills in the Social Studies Curriculum

The National Content Standards in Economics include the following skills which play an important part in economic reasoning:

- identifying economic problems, alternatives, benefits, and costs
- analyzing the incentives at work in an economic situation
- examining the consequences of changes in economic conditions and public policies
- collecting and organizing economic evidence
- comparing benefits with costs.

Instructional Model

Skills are not intended to be taught in isolation. There should be a natural integration of content and skills. The instructional sequence for K-12 skill development includes the following:

- presenting a model of the use of the skills
- providing several opportunities for students to work through the skills with careful teacher guidance
- continuing opportunities for additional practice with increasingly complex variations of the skills in a variety of settings
- opportunities for students to evaluate their own work.

Foundation for Skills Development

Mastery of the social studies skills comes only as the result of practice, continued use, and refinement through an integrated historical, social, political, and economic context. Social studies skills are necessary for the development of social inquiry and rational decision making and must be clearly identified and sequentially developed throughout the K-12 program. Use of the following critical thinking processes provides a foundation for development of the four social studies skills in the K-12 social studies framework:

- classifying
- interpreting
- analyzing
- summarizing
- synthesizing
- evaluating.

Skills in the Social Studies Curriculum

SKILL I:
The learner will acquire information from a variety of sources.

Students who possess skill in acquiring information are good questioners, observers, and researchers. It is the responsibility of the teacher to integrate information acquisition skills so that students develop and refine questioning skills and use those skills within the K-12 social studies content sequence to make direct observations, interview people, and seek information from a variety of sources. The skills process becomes the means through which the content is learned.

The teacher will facilitate the development of information acquisition skills as students:

- use questioning skills
- use observation skills
- use prepared sources.

The teacher will encourage use of appropriate technology to introduce information acquisition skills.

Social studies instruction reinforces reading and study skills by employing skills such as:

- interpreting what is read by drawing inferences
- detecting cause and effect relationships
- distinguishing between fact and opinion (recognizing propaganda)
- recognizing author bias
- reading for a variety of purposes: critically, analytically, to predict outcomes, to answer a question, to form an opinion, to skim for facts
- reading various forms of printed material: books, periodicals, directories, primary documents
- recognizing and understanding an increasing number of social studies terms.

Skills in the Social Studies Curriculum

SKILL II:
The learner will use information for problem solving, decision making, and planning.

Overview

Students who are skillful users of information make valid decisions, solve problems effectively, and create realistic plans. Use of information is a K-12 process that is best approached through an integrated content delivery. Intensity of skill implementation is dependent upon the age of the student as well as the social studies context.

Problem Solving

The following steps are suggested for students to use in the development of skills. Steps in solving a problem are:

- recognizing a problem
- defining the problem
- gathering data (compare and classify information)
- selecting an appropriate strategy
- implementing the strategy.

Decision Making

Steps to follow in making a decision are:

- identifying a situation in which a decision is required
- secureing needed factual information relevant to making the decision
- recognizing the values implicit in the situation and the issues that flow from them
- developing criteria for decisions
- identifying alternative courses of action and predict likely consequences of each
- making a decision based on data obtained
- implementing the decision.

Planning

Strategies to promote effective planning involve:

- Focusing: identifying the task
- Ordering: developing a timeline
- Predicting: identifying resources
- Implementing: assigning roles and responsibilities
- Reflecting: monitoring progress.

Skills in the Social Studies Curriculum

SKILL III:
The learner will develop skills in constructive interpersonal relationships and social participation.

Students skilled in constructive interpersonal relationships and social participation are sensitive to the motives and feelings of other people. They describe unfamiliar ideas, people, and places accurately without using distorting stereotypes. They are aware of their own cultural attitudes as they encounter cultures unlike their own. In developmentally appropriate K-12 settings, teachers provide opportunities for students to learn how to adjust behaviors in order to function in constructive ways. Students are taught to use information to act appropriately when confronted by change, diversity, ambiguity, or conflict.

Teachers should foster development of intrapersonal skills by encouraging students to:

- communicate their own beliefs, feelings, and convictions
- self-monitor one's thinking process
- select an appropriate strategy to resolve an internal conflict.

Teachers should foster development of interpersonal skills by encouraging students to:

- recognize and demonstrate mutual respect between human beings
- select an appropriate strategy to resolve an external conflict.

Teachers should foster development of group participation skills by encouraging students to:

- contribute to the development of a supportive climate in working with others
- work effectively in groups
- follow democratic procedures
- practice conflict resolution skills
- practice conflict mediation skills.

Students should be provided experiences in dealing with the following:

- **Change:** accept that change is inevitable and natural
  develop skills needed to promote desired change or inhibit undesirable change
- **Ambiguity:** accept that ambiguity is inevitable and natural
  revise thinking as new information becomes evident
- **Diversity:** accept that diversity is natural
  develop skills that promote communication and demonstrate respect for other cultures
- **Conflict:** accept that conflict is natural and to be expected
  develop appropriate strategies to deal with conflict.

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Skills in the Social Studies Curriculum

Overview

SKILL IV:
The learner will participate effectively in civic affairs.

Skilled participants in civic affairs work well alone and as members of groups. In the classroom, students present their own ideas clearly and concisely and listen carefully to the ideas of others. They participate in and lead group discussions. They engage in group decision making and act on the decisions of the group, respecting both majority rule and the rights of the minority. Teachers provide age appropriate opportunities for students to recognize that change is inevitable and to develop the needed skills to respond to change. Students are provided a variety of opportunities K-12 to become familiar with civic involvement in the community, state, and nation. Development of civic participation skills is integrated into the social studies content area in a realistic manner that promotes understanding and application of skills leading to good citizens.

Civic participation

Students who have developed effective civic participation skills will do the following:

- keep informed on issues that affect society
- use critical thinking skills to address social and political issues
- identify situations in which social action is required
- use the tools of building coalitions, negotiating, compromising, and seeking consensus with social and political issues
- work individually or with others to decide on an appropriate course of action
- work to influence those in positions of social power to strive for extensions of freedom, social justice, and human rights
- accept and fulfill social responsibilities associated with citizenship in a free society.

Social Studies K-12 Program Framework

Grades K-3

The social studies program at the primary level introduces children to important concepts and generalizations from history and the social sciences thorough an integrated study of children and their families, their homes and school, and the neighborhoods and communities where they live. Studies begin with immediate surroundings familiar to children and proceed deliberately to children and families, homes and schools, and neighborhoods and communities in other environments. Such an approach enables children to build increasingly sophisticated concepts and generalizations and enhances their abilities to examine the perspectives of other children in other places and times.

Grades 4-5

Elementary students begin studies of world regions as they examine regions of North Carolina, the United States, Canada, and nations of Latin America. As they begin this process of regional study, they are able to reinforce basic concepts taken from history and the social sciences, but the primary discipline is geography, especially cultural geography. Beginning with the fourth grade study of North Carolina, its regions, and the regions of which it is a part, students progress to fifth grade study of the Western Hemisphere. Half the program at that grade is devoted to the study of the United States. In the remaining half of the year, students learn about Canada and its regions and Latin American nations.

Grades 6-8

Students in the middle level social studies program continue the geographic study of world regions as they examine the Eastern Hemisphere. They engage as well in the historical study of their own state as a part of the larger national history. In the process, they continue the development of basic concepts taken from history and the social science disciplines. Geography continues to be the primary discipline, especially cultural geography. The middle level studies of Europe, Africa, Asia, and North Carolina complete the study of the state, nation, and world begun in grade four.

Grades 9-12

At the secondary level, students polish and deepen their understanding of history and the social sciences. Following the essentially geographic perspective of grades four through seven, the secondary social studies program builds upon the historical study of grade eight with formal study of the history of the United States; links economics and political science (government) in a course intended to provide students the knowledge, skills, and habits of mind to enter effectively into adult citizenship; offers several perspectives for world study; and suggests a variety of social studies electives.

Kindergarten – The Individual and Group Relationships

Goals and Objectives

GOAL 1:

The learner will exhibit traits of good citizenship in the classroom and school.

1.1 Participate constructively in school and classroom activities.
1.2 Participate in democratic decision making and act in keeping with group decisions.
1.3 Assume responsibility in routine activities.

GOAL 2:

The learner will infer that individuals and families are alike and different.

2.1 Describe aspects of families.
2.2 Distinguish likenesses and differences among individuals and families.
2.3 Compare one's family life with that of another child.

GOAL 3:

The learner will apply understandings about the social environment to daily situations.

3.1 Describe aspects of the home environment and one's role in that environment.
3.2 Compare appropriate behaviors in home and school environments.
3.3 Demonstrate an understanding of appropriate behavior in different environments.

GOAL 4:

The learner will apply understandings of authority, responsibility, and justice in a democratic society.

4.1 Use established procedures in the classroom and school.
4.2 Respect persons in positions of authority.
4.3 Assume responsibility for one's own actions.
4.4 Recognize the need for fair rules and laws.
4.5 Analyze classroom problems and suggest fair solutions.

GOAL 5:

The learner will elaborate on the value of community services.

5.1 Recognize examples of community services.
5.2 Summarize jobs performed by community workers.
5.3 Identify relationships between community needs and community services.

GOAL 6:

The learner will characterize change in different settings.

6.1 Describe changes in one's self.
6.2 Identify changes in one's family.
6.3 Recognize changes in the classroom and school environments.

GOAL 7:

The learner will elaborate on religious and other cultural traditions in the community.

7.1 Identify religious and secular symbols associated with famous people, holidays, and special days.
7.2 Participate in special days that are observed by the class.
7.3 State reasons for observing special days and religious and secular holidays.

GOAL 8:

The learner will apply basic geographic concepts.

8.1 Locate and describe familiar places in home, classroom, and school settings.
8.2 Construct simple maps, models, and drawings of home, classroom, and school settings.
8.3 Analyze the functions of places in the home, the classroom, and the school.
8.4 Recognize seasonal changes.
8.5 Identify things in the natural environment that are important to one's self.

GOAL 9:

The learner will apply basic economic concepts to individuals and families.

9.1 Participate in activities that demonstrate the concept of scarcity.
9.2 Distinguish between wants and needs.
9.3 Identify different types of work.
9.4 Participate in activities that require division of labor.
9.5 Identify some uses of money by individuals and families.

Grade 1 – Home and School

Goals and Objectives

GOAL 1:

The learner will exhibit attributes of good citizenship in the classroom and school.

1.1 Participate constructively in school and classroom activities.
1.2 Participate in democratic decision making in the classroom.
1.3 Demonstrate personal responsibility in school activities.
1.4 Cooperate with and help others in classroom situations.

GOAL 2:

The learner will infer that individuals and families are alike and different.

2.1 Describe the roles of individuals in the family.
2.2 Distinguish similarities and differences among individuals and families.
2.3 Compare one's own family life with that of a child living in another culture.

GOAL 3:

The learner will analyze important social environments

3.1 Identify social environments in homes and schools.
3.2 Compare social environments in homes and schools.
3.3 Describe and demonstrate appropriate behavior in various environments.

GOAL 4:

The learner will apply concepts of authority, responsibility, and justice to home and school settings.

4.1 Explain why certain individuals have authority.
4.2 Predict the consequences of responsible and irresponsible actions.
4.3 Elaborate on the need to apply rules fairly in the home, school, and community.

GOAL 5:

The learner will describe relationships between people and their governments.

5.1 Identify and elaborate on community services.
5.2 Distinguish those community services provided by governments.
5.3 Cite examples of people depending on governments and governments depending on people.

GOAL 6:

The learner will identify change in different settings.

6.1 Describe personal and family changes.
6.2 Recognize and describe changes in the classroom and school during the year.
6.3 Identify and describe changes outside the school environment.

GOAL 7:

The learner will elaborate on religious and other cultural traditions in the community.

7.1 Identify religious and secular symbols associated with famous people, holidays, and special days.
7.2 Participate in classroom activities associated with special days and holidays in the community and other countries.
7.3 Cite reasons for observing special days and religious and secular holidays.

GOAL 8:

The learner will apply basic geographic concepts.

8.1 Locate and describe familiar places in the home, classroom, and school.
8.2 Construct simple maps, models, and pictures representing home and school settings.
8.3 Identify the functions of places in homes and schools.
8.4 Analyze patterns of movement between homes and schools.
8.5 Demonstrate responsibility for the environment in classroom, school, and community settings.

GOAL 9:

The learner will apply basic economic concepts to home and school.

9.1 Participate in activities that demonstrate the concept of scarcity.
9.2 Distinguish between wants and needs.
9.3 Distinguish between goods and services.
9.4 Know that all families produce and consume goods and services.
9.5 Participate in activities that require division of labor.
9.6 Identify some uses of money by individuals and families.

Grade 2 – Neighborhood and Local Community

Goals and Objectives

GOAL 1:

The learner will exhibit good citizenship in the classroom, school, neighborhood, and community.

1.1 Identify and describe attributes of good citizenship.
1.2 Demonstrate good citizenship in classroom and school actions.
1.3 Compare good citizenship in the classroom and school to neighborhood and community citizenship.

GOAL 2:

The learner will infer that individuals, families, and institutions in neighborhoods and communities are and have been alike and different.

2.1 Distinguish similarities and differences between one's self and other family members.
2.2 Describe similarities and differences among families in different neighborhoods and communities.
2.3 Distinguish similarities and differences among institutions in different neighborhoods and communities.

GOAL 3:

The learner will analyze multiple roles in families, work places, neighborhoods, and communities.

3.1 Identify multiple roles performed by children in their families, schools, and neighborhoods.
3.2 Describe multiple roles performed by children in other neighborhoods and communities.
3.3 Describe multiple roles performed by adults in neighborhoods and communities.

GOAL 4:

The learner will apply the concepts of authority, responsibility, and justice to democratic societies.

4.1 Suggest and justify rules and laws for neighborhoods and communities.
4.2 Suggest the consequences of not obeying rules and laws.
4.3 Describe the basic authority given to local elected officials.
4.4 Identify examples of responsible participation in neighborhoods and communities.
4.5 Evaluate fair and unfair procedures for dealing with neighborhood and community problems.
4.6 Distinguish aspects of the justice system evident in neighborhoods and communities.

GOAL 5:

The learner will evaluate relationships between people and their governments.

5.1 Identify government bodies and explain their functions in neighborhoods.
5.2 Cite examples of the elective process in the community.
5.3 Analyze how individuals and families depend on government services and how local governments depend on the support of citizens.
5.4 Identify examples of tax money being used in neighborhoods and communities.

GOAL 6:

The learner will evaluate change in neighborhoods and communities.

6.1 Identify examples of change in neighborhoods.
6.2 Analyze the effects of change in a given neighborhood or community.
6.3 Predict logical future changes.

GOAL 7:

The learner will analyze religious and other cultural traditions.

7.1 Identify religious and secular holidays observed in neighborhoods and communities.
7.2 Interpret religious and secular symbols used in neighborhoods and communities.
7.3 Elaborate on patriotic symbols and observances.
7.4 Identify selected famous people in history.

GOAL 8:

The learner will apply basic geographic concepts and terminology.

8.1 Describe uses of maps and globes.
8.2 Use geographic terms to describe landforms, bodies of water, weather, and climate.
8.3 Identify indigenous vegetation and animal life in neighborhoods.

Grade 2 – Neighborhood and Local Community

Goals and Objectives

GOAL 9:

The learner will apply geographic themes to neighborhoods.

9.1 Identify the absolute and relative location of neighborhoods.
9.2 Compare physical and human characteristics of neighborhoods.
9.3 Analyze human-environment interaction in the local and other neighborhoods.
9.4 Identify means and methods of human movement in the local and other neighborhoods.
9.5 Identify the extended regions of the local neighborhood and compare to regions of other neighborhoods.

GOAL 10:

The learner will apply basic economic concepts to neighborhoods.

10.1 Identify examples of scarcity in neighborhoods.
10.2 Distinguish between wants and needs.
10.3 Define income and identify different sources of income in neighborhoods.
10.4 Explain the use of money as a means of exchange.
10.5 Distinguish between goods produced and services provided in neighborhoods.

GOAL 11:

The learner will evaluate the uses of economic resources in different neighborhoods.

11.1 Identify economic resources in neighborhoods.
11.2 Describe the use of economic resources in neighborhoods.
11.3 Analyze the changing uses of a neighborhood's economic resources and predict logical future changes.

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Grade 3 – Communities

Goals and Objectives

GOAL 1:

The learner will exhibit good citizenship in the classroom, school, and community.

1.1 Identify attributes of good citizenship.
1.2 Cite skills of good citizenship.
1.3 Distinguish between school and community citizenship.

GOAL 2:

The learner will infer that individuals, families, and communities are and have been alike and different.

2.1 Distinguish similarities and differences among children at different times and in different places.
2.2 Analyze similarities and differences among families in different times and in different places.
2.3 Assess similarities and differences among communities in different times and in different places.

GOAL 3:

The learner will analyze the multiple roles that individuals perform in families, workplaces, and communities.

3.1 Distinguish among the economic, political, and social roles of children and adults.
3.2 Describe roles performed by children and adults in communities studied.
3.3 Clarify the roles of children and adults in communities that differ from one's own in time and place.

GOAL 4:

The learner will apply concepts of authority, responsibility, and justice in a democratic society.

4.1 Cite the need for persons in positions of authority and judge the privileges and limitations of such positions.
4.2 Suggest responsible courses of action in given situations and assess the consequences of irresponsible behavior.
4.3 Suggest fair ways of distributing benefits and burdens.
4.4 Evaluate procedures for dealing with problems and conclude which are more just.
4.5 Elaborate on selected aspects of the justice system.

GOAL 5:

The learner will evaluate relationships between people and their governments.

5.1 Distinguish between government and non-government bodies in the community.
5.2 Summarize the elective process in the community and distinguish between elected and appointed officials.
5.3 Analyze how individuals and families depend on government services and how governments depend on their citizens.
5.4 Give examples of and cite the need for taxes.
5.5 Identify the political subdivisions in which one lives.
5.6 Summarize how governmental services and activities have changed over time.

GOAL 6:

The learner will evaluate change in different settings.

6.1 Identify and analyze changes which have occurred in communities in different settings.
6.2 Assess the impact of change on the lives of people in communities studied.
6.3 Predict logical future change in communities studied.

GOAL 7:

The learner will analyze religious and other cultural traditions in a variety of communities.

7.1 Identify and explain the importance of selected persons, patriotic symbols, and public observances.
7.2 Distinguish between secular and religious symbols and explain why secular and religious holidays are celebrated as they are.
7.3 Identify a variety of examples of cultural traditions.

GOAL 8:

The learner will apply basic geographic concepts and terminology.

8.1 Distinguish among various kinds of maps and globes and suggest their uses.
8.2 Use correct terminology to describe landforms and bodies of water.
8.3 Apply understandings about climate and topography to communities studied.

Grade 3 – Communities

Goals and Objectives

GOAL 9:

The learner will apply geographic themes to communities.

9.1 Know absolute and/or relative locations of the local and other communities.

9.2 Understand the concept of place within the context of the local community.

9.3 Identify examples of human-environment interaction in the local and wider communities.

9.4 Apply concepts of movement that link the local and other communities.

9.5 Distinguish the local region from other regions of which it is a part.

GOAL 10:

The learner will apply basic economic concepts to communities studied.

10.1 Draw relationships between unlimited wants and limited resources and cite examples from communities studied.

10.2 Apply understandings about specialization and division of labor to communities studied.

10.3 State differences and similarities among various means of economic exchange.

10.4 Describe the functions of banks in given communities.

GOAL 11:

The learner will evaluate the uses of economic resources in different communities.

11.1 Distinguish economic resources of the local community from those of other communities studied.

11.2 Analyze the uses of economic resources in a variety of communities.

11.3 Recognize and explain reasons for economic interdependence in communities and regions.

11.4 Describe the changing uses of a community's economic resources and predict logical future changes.

Grade 4 - North Carolina: The Land and Its People

Goals and Objectives

GOAL 1:

The learner will analyze the characteristics of the people of North Carolina.

1.1 Identify, locate, and describe ways of living of the major Native- American groups in North Carolina, past and present.

1.2 Describe the origins and characteristics of major groups that settled in North Carolina and assess their influence on North Carolina customs.

1.3 Analyze similarities and differences among North Carolina's people, past and present.

GOAL 2:

The learner will assess the influence of major religions, ethical beliefs, and aesthetic values on life in North Carolina.

2.1 Describe traditional art forms and aesthetic values in North Carolina.

2.2 Identify religious and ethical beliefs that have influenced life in North Carolina and assess the importance of this influence on North Carolina society.

2.3 Analyze economic, social, and political situations which involve ethical and moral dilemmas.

GOAL 3:

The learner will locate major physical features and suggest the influence of location on life in North Carolina.

3.1 Describe the absolute and relative location of the state and places within the state.

3.2 Locate in absolute and relative terms major landforms, bodies of water, and natural resources in North Carolina.

3.3 Suggest some influences that location has on life in North Carolina.

GOAL 4:

The learner will assess the significance of physical and cultural characteristics of regions within North Carolina and the regions of which North Carolina is a part.

4.1 Explain how regions are defined, and identify regions within North Carolina and regions of which North Carolina is a part.

4.2 Describe the major physical and cultural characteristics of regions within North Carolina.

4.3 Compare the physical and cultural characteristics of regions within North Carolina.

4.4 Evaluate the importance of regional differences in North Carolina.

GOAL 5:

The learner will evaluate ways the people of North Carolina use, modify, and adapt to the physical environment.

5.1 Explain how North Carolinians in the past used, modified, or adapted to the physical environment.

5.2 Describe how North Carolinians now use, modify, or adapt to their physical environment.

5.3 Analyze causes and consequences of the misuse of the physical environment and propose alternatives.

GOAL 6:

The learner will evaluate the significance of the movement of people, goods, and ideas from place to place.

6.1 Trace the movement of people, goods, and ideas from one part of the state to another and between North Carolina and other places.

6.2 Compare ways in which people, goods, and ideas moved in the past in North Carolina with their movement today.

6.3 Judge the importance of the movement of people, goods, and ideas for North Carolina

GOAL 7:

The learner will analyze the effectiveness of government agencies and political institutions in North Carolina.

7.1 Identify important services provided by state government in North Carolina.

7.2 Explain how state government services are financed.

7.3 Evaluate personal characteristics and skills necessary for effective leadership by state officials and political leaders.

GOAL 8:

The learner will examine ways North Carolinians govern themselves.

8.1 Identify major government authorities at the local, state, and national levels, know how they are selected, and state their general areas of responsibility.

8.2 Demonstrate an understanding of the importance of responsible citizenship and explain ways North Carolinians can participate as citizens.

8.3 Analyze ways North Carolinians deal with questions of justice.

8.4 Analyze relationships among local, state, and national governments.

Grade 4 – North Carolina: The Land and Its People

Goals and Objectives

GOAL 9:

The learner will evaluate how North Carolinians use economic resources to satisfy their wants and needs.

9.1 Explain the relationship between unlimited wants and limited resources.

9.2 Analyze the choices and opportunity cost involved in economic decisions.

9.3 Categorize the state's resources as natural, human, or capital.

9.4 Assess the use being made of natural resources in North Carolina.

GOAL 10:

The learner will analyze North Carolina's economic relationships.

10.1 Describe ways in which the economy of North Carolina is interdependent.

10.2 Analyze examples of interdependence in the North Carolina economy and in our economic relationships with other states and other nations.

10.3 Evaluate the influence of discoveries, inventions, and technological innovations on economic interdependence.

GOAL 11:

The learner will assess changes in ways of living over time and investigate why and how these changes occurred.

11.1 Identify and describe changes which have occurred in ways of living in North Carolina.

11.2 Distinguish among political, social, and economic changes.

11.3 Evaluate the effects of change on the lives of the people of North Carolina.

GOAL 12:

The learner will trace developments in North Carolina history and describe their impact on the lives of people today.

12.1 Identify people, symbols, and events associated with North Carolina's heritage.

12.2 Assess the influence of an important event from North Carolina's past on life today.

Grade 5 – The Western Hemisphere: The US, Canada, and Latin America

Goals and Objectives

GOAL l:

The learner will analyze characteristics of people of the Western Hemisphere.

1.1 Identify, locate, and describe major groups of people, past and present, in the United States, Canada, and Latin America.

1.2 Describe similarities and differences among the people of the United States, Canada, and Latin America.

1.3 Assess the role and status of individuals and groups in the United States, Canada, and Latin America, past and present.

GOAL 2:

The learner will assess the influence of major religions, ethical beliefs, and aesthetic values on life in the United States, Canada, and Latin America.

2.1 Describe evolving art forms and aesthetic values and assess their influence on life in the United States, Canada, and Latin America.

2.2 Evaluate the influence of beliefs, individuals, and practices associated with major religions in the United States, Canada, and Latin America.

2.3 Analyze economic, social, and political situations which involve ethical and moral dilemmas.

GOAL 3:

The learner will locate major physical features and suggest the influence of location on life in the Western Hemisphere.

3.1 Describe the absolute and relative location of major landforms, bodies of water, and natural resources in the United States, Canada, and Latin America.

3.2 Analyze the impact of the absolute and relative location of places on ways of living in the United States, Canada, and Latin America.

GOAL 4:

The learner will assess the significance of the physical and cultural characteristics of regions within the Western Hemisphere.

4.1 Define region and identify various regions within the Western Hemisphere.

4.2 Compare the physical and cultural characteristics of regions within the Western Hemisphere and within the United States, Canada, and Latin America.

4.3 Describe differences between developed and developing regions in the Western Hemisphere.

GOAL 5:

The learner will evaluate ways the people of the Western Hemisphere use, modify, and adapt to the physical environment.

5.1 Explain how people of the Western Hemisphere adapt and have adapted to their environment.

5.2 Describe how the people of the United States, Canada, and Latin America use and modify their physical environment.

5.3 Analyze causes and consequences of the misuse of the physical environment and propose alternatives.

GOAL 6:

The learner will evaluate the significance of the movement of people, goods, and ideas from place to place.

6.1 Analyze the movement of people, goods, and ideas within and among the countries of the United States, Canada, and Latin America and between the Western Hemisphere and other places.

6.2 Compare ways in which people, goods, and ideas moved in the past in the United States, Canada, and Latin America with their movement today.

6.3 Judge how changes in the movement of people, goods, and ideas have affected ways of living in the Western Hemisphere.

GOAL 7:

The learner will examine the relationship of the United States, Canada, and Latin America to other nations and to world affairs.

7.1 Explain how the world is organized politically.

7.2 Describe how nation-states interact with each other.

7.3 Describe how United States foreign policy is made and the means by which it is carried out.

7.4 Identify the role of major international organizations.

Grade 5 – The Western Hemisphere: The US, Canada, and Latin America

Goals and Objectives

GOAL 8:

The learner will examine ways the people of the United States, Canada, and Latin America govern themselves.

8.1 Identify the three levels of government in the United States and describe their legislative, executive, and judicial functions.

8.2 Analyze how the societies of the United States, Canada, and Latin America deal with the issues of justice.

8.3 Describe how governments in the United States, Canada, and Latin America select leaders and establish laws.

8.4 Compare forms of government in the United States, Canada, and Latin American nations and explain how and why they have changed over time.

GOAL 9:

The learner will determine ways societies in the Western Hemisphere make decisions about the allocation and use of economic resources.

9.1 Categorize economic resources found in the United States, Canada, and Latin America as human, natural, or capital.

9.2 Compare ways resources are used in the United States, Canada, and Latin America.

9.3 Analyze the effects of the unequal distribution of natural resources.

9.4 Describe the characteristics of economies in the United States, Canada, and Latin America and how they have changed over time.

9.5 Assess economic institutions in terms of how well they enable people to meet their needs.

GOAL 10:

The learner will analyze economic relationships in the Western Hemisphere.

10.1 Describe ways in which the economies of the United States, Canada, and Latin America are interdependent.

10.2 Assess causes and effects of increasing international economic interdependence.

10.3 Evaluate the influence of discoveries, inventions, and innovations on economic interdependence.

GOAL 11:

The learner will analyze changes in ways of living and investigate why and how these changes occurred.

11.1 Identify and describe changes which have occurred in ways of living in the United States, Canada, and Latin America.

11.2 Identify examples of cultural transmission and interaction within and among the regions of the Western Hemisphere.

11.3 Evaluate the effects of change on the lives of the people of the United States, Canada, and Latin America.

GOAL 12:

The learner will trace developments in the history of the United States, Canada, and Latin America and assess their impact on the lives of people today.

12.1 Identify people, symbols, and events associated with the heritage of the United States, Canada, and Latin America.

12.2 Associate an event or phenomenon in the history of the United States, Canada, or Latin America with a current situation or practice.

12.3 Trace an economic, political, or social development through the history of the United States, Canada, or Latin America and judge its impact on society.

Grade 6 – The Eastern Hemisphere: Europe and Former Soviet Republics

Goals and Objectives

GOAL 1:

The learner will investigate the characteristics of the people of Europe and former Soviet Republics.

1.1 Identify the origins, characteristics, and influences of major groups of people in Europe and former Soviet Republics.

1.2 Describe similarities and differences among the people of Europe and former Soviet Republics.

1.3 Assess the role, status, and social class of individuals and groups in Europe and former Soviet Republics, past and present.

GOAL 2:

The learner will assess the influence of major religions, ethical beliefs, and aesthetic values on life in Europe and former Soviet Republics.

2.1 Describe and assess the influence of evolving art forms and aesthetic values of Europe and former Soviet Republics societies.

2.2 Evaluate the influence of beliefs, individuals, and practices associated with major religions in Europe and former Soviet Republics.

2.3 Analyze economic, social, and political situations which involve ethical and moral dilemmas.

GOAL 3:

The learner will locate major physical features and suggest the influence of their location on life in Europe and former Soviet Republics.

3.1 Describe the absolute and relative location of major landforms, bodies of water, and natural resources in Europe and former Soviet Republics.

3.2 Analyze the impact of the absolute and relative location of places on ways of living within Europe and former Soviet Republics.

GOAL 4:

The learner will assess the significance of the physical and cultural characteristics of regions within Europe and former Soviet Republics.

4.1 Define region and identify various regions within Europe and former Soviet Republics.

4.2 Compare the physical and cultural characteristics of regions within Europe and former Soviet Republics.

4.3 Distinguish between developed and developing regions in Europe and former Soviet Republics.

GOAL 5:

The learner will evaluate ways the people of Europe and former Soviet Republics use, modify, and adapt to their physical environment.

5.1 Explain how the people of Europe and former Soviet Republics have adapted to their environment.

5.2 Describe how the people of Europe and former Soviet Republics use and modify their environment.

5.3 Analyze causes and consequences of the misuse of the environment and propose alternatives.

GOAL 6:

The learner will evaluate the significance of the movement of people, goods, and ideas.

6.1 Analyze the movement of people, goods, and ideas within and among the countries of Europe and former Soviet Republics and other world areas.

6.2 Compare ways in which people, goods, and ideas moved in the past in Europe and former Soviet Republics with their movement today.

6.3 Judge how changes in the movement of people, goods, and ideas have affected ways of living in Europe and former Soviet Republics.

GOAL 7:

The learner will evaluate the relationship of the nations of Europe and former Soviet Republics to each other, to other world nations, and to world affairs.

7.1 Explain how nations in Europe and former Soviet Republics are organized politically.

7.2 Describe how nation-sates interact with each other.

7.3 Analyze how foreign policy is made and the means by which it is carried out.

7.4 Assess the role of major international organizations in Europe and former Soviet Republics.

Grade 6 – The Eastern Hemisphere: Europe and Former Soviet Republics

Goals and Objectives

GOAL 8:

The learner will analyze how societies in Europe and former Soviet Republics govern themselves.

8.1 Describe how different types of governments in Europe and former Soviet Republics carry out legislative, executive, and judicial functions.

8.2 Analyze how governments in Europe and former Soviet Republics deal with issues of justice.

8.3 Describe how governments in Europe and former Soviet Republics select leaders and establish laws.

8.4 Compare various forms of government in Europe and former Soviet Republics and explain how and how and why they have changed over time.

GOAL 9:

The learner will determine how societies in Europe and former Soviet Republics make decisions about the allocation and use of economic resources.

9.1 Identify economic resources found in Europe and former Soviet Republics and explain relationships between the location of natural resources and economic activities.

9.2 Analyze ways economic resources are used.

9.3 Assess the effects of the unequal distribution of resources.

9.4 Describe the characteristics of economies and how they have changed over time.

9.5 Assess economic institutions in terms of how well they enable people to meet their needs.

GOAL 10:

The learner will analyze economic relationships in Europe and former Soviet Republics.

10.1 Describe the effects of interdependence on economies.

10.2 Assess causes and effects of increasing international economic interdependence.

10.3 Evaluate the influence of inventions, discoveries, and innovations on economic interdependence.

GOAL 11:

The learner will analyze changes in ways of living and investigate how and why these changes occurred.

11.1 Describe and analyze changes which have occurred in ways of living in Europe and former Soviet Republics.

11.2 Identify examples of cultural transmission and interaction within and among regions in Europe and former Soviet Republics.

11.3 Evaluate the effects of change on the lives of people in Europe and former Soviet Republics.

GOAL 12:

The learner will trace developments in the history of Europe and former Soviet Republics and describe their impact on the lives of people today.

12.1 Identify people, symbols, and events associated with the heritage of societies of Europe and former Soviet Republics.

12.2 Associate an event or phenomenon in the history of societies in Europe and former Soviet Republics with a current situation or practice.

12.3 Trace an economic, political, or social development through the history of Europe and former Soviet Republics, judge its impact, and predict future changes.

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Grade 7 – The Eastern Hemisphere: Africa and Asia

Goals and Objectives

GOAL l:

The learner will investigate the characteristics of the people of Africa and Asia.

1.1 Identify the origins, characteristics, and influences of major groups of people in Africa and Asia.

1.2 Describe similarities and differences among people of Africa and Asia.

1.3 Assess the role, status, and social class of individuals and groups in Africa and Asia, past and present.

GOAL 2:

The learner will assess the influence of major religions, ethical beliefs, and aesthetic values on life in Africa and Asia.

2.1 Describe and assess the influence of evolving art forms and aesthetic values in African and Asian societies.

2.2 Evaluate the influence of beliefs, religious practices, and individuals associated with major religions in Africa and Asia.

2.3 Analyze economic, social, and political situations which involve ethical and moral dilemmas.

GOAL 3:

The learner will locate major physical features and suggest the influence of their location on life in Africa and Asia.

3.1 Describe the absolute and relative location of major landforms, bodies of water, and natural resources within Africa and Asia.

3.2 Analyze the impact of the absolute and relative location of places within Africa and Asia.

GOAL 4:

The learner will assess the significance of the physical and cultural characteristics of geographic regions within Africa and Asia.

4.1 Define region and identify various regions within Africa and Asia.

4.2 Compare the physical and cultural characteristics of regions within Africa and Asia.

4.3 Distinguish between developed and developing regions in Africa and Asia.

GOAL 5:

The learner will evaluate ways people in Africa and Asia use, modify, and adapt to their physical environment.

5.1 Explain how the people of Africa and Asia have adapted to their physical environment.

5.2 Describe how the people of Africa and Asia use and modify their physical environment.

5.3 Analyze causes and consequences of misuse of the physical environment and propose alternatives.

GOAL 6:

The learner will evaluate the significance of the movement of people, goods, and ideas.

6.1 Analyze the movement of people, goods, and ideas within, between, and among nations in Africa and Asia and other world areas.

6.2 Compare ways in which people, goods, and ideas moved in the past in Africa and Asia with their movement today.

6.3 Judge how changes in the movement of people, goods, and ideas have affected ways of living in Africa and Asia.

GOAL 7:

The learner will evaluate the relationship of the nations of Africa and Asia to each other, to other world nations, and to world affairs.

7.1 Explain how Africa and Asia are organized politically.

7.2 Describe how nation-states interact with each other.

7.3 Analyze how foreign policy is made and the means by which it is carried out.

7.4 Assess the role of major international organizations in Africa and Asia.

GOAL 8:

The learner will analyze how societies in Africa and Asia govern themselves.

8.1 Describe how different types of governments in Africa and Asia carry out legislative, executive, and judicial functions.

8.2 Analyze how societies in Africa and Asia deal with issues of justice.

8.3 Describe how governments in Africa and Asia select leaders and establish laws.

8.4 Compare forms of government in Africa and Asia and explain how and why they have changed over time.

Grade 7 - The Eastern Hemisphere: Africa and Asia

Goals and Objectives

GOAL 9:

The learner will determine how societies in Africa and Asia make decisions about the allocation and use of economic resources.

9.1 Identify resources found in Africa and Asia and explain the relationship between the location of resources and economic activities.

9.2 Compare ways economic resources are used in African and Asian economies.

9.3 Analyze the effects of the unequal distribution of resources.

9.4 Describe the characteristics of economies in Africa and Asia and how they have changed over time.

9.5 Assess economic institutions in terms of how well they enable people to meet their needs.

GOAL 10:

The learner will analyze economic relationships in Africa and Asia.

10.1 Describe the effects of interdependence on economies in Africa and Asia.

10.2 Assess causes and effects of increasing economic interdependence.

10.3 Evaluate the influence of inventions, discoveries, and innovations on economic interdependence.

GOAL 11:

The learner will analyze changes in ways of living over time and assess the impact of these changes.

11.1 Describe and analyze changes which have occurred in ways of living in Africa and Asia.

11.2 Identify examples of cultural transmission and interaction within and among regions in Africa and Asia.

11.3 Judge the effect of change on the lives of people in Africa and Asia.

GOAL 12:

The learner will trace developments in the history of African and Asian nations and judge their impact on the lives of people today.

12.1 Identify people, symbols, and events associated with the heritage of African and Asian societies.

12.2 Associate an event or phenomenon in the history of African and Asian societies with current situations or practices.

12.3 Trace an economic, political, or social development through the history of Africa or Asia, judge its impact, and predict future changes.

Grade 8 – North Carolina: The History of an American State

Goals and Objectives

GOAL 1:

The learner will assess the influence of geography on the economic, social, and political development of North Carolina.

1.1 Determine the absolute and relative location of physical and cultural features.

1.2 Describe the physical and cultural aspects of North Carolina places.

1.3 Analyze ways North Carolinians have modified, used, and adapted to the physical environment.

1.4 Trace changes in the movement of people, goods, and ideas at different periods throughout North Carolina history.

1.5 Assess the importance of regional diversity on the development of economic, social, and political institutions in North Carolina.

GOAL 2:

The learner will evaluate the effects of early contacts between various European nations and Native Americans.

2.1 Identify Native-American cultures and evaluate their contributions to North Carolina culture.

2.2 Describe and explain differences between Native Americans and Europeans in their attitudes toward the use of natural resources.

2.3 Describe the influence of trading contacts on relations between Native Americans and Europeans in North America.

2.4 Describe and distinguish among early European explorations in North America.

GOAL 3:

The learner will analyze important economic, social, religious, and political aspects of life in colonial North America.

3.1 Locate important European settlements in North America and delineate reasons for their settlement.

3.2 Analyze the influence of various groups on colonial life in America.

3.3 Identify and assess the role of prominent colonial figures.

3.4 Assess the role of ethnic, racial, and religious minorities in colonial society.

GOAL 4:

The learner will trace causes and evaluate effects of major events and personalities of the Revolutionary War Era.

4.1 Assess the degree of economic and political control exercised from London throughout the colonial period.

4.2 Elaborate on the major reasons for the American Revolution.

4.3 Judge the role of prominent Revolutionary Era leaders.

4.4 Compare the Halifax Resolves and the Declaration of Independence.

4.5 Cite the significance of Revolutionary battles fought in North Carolina and their effect on the outcome of the war in other colonies.

GOAL 5:

The learner will assess the impact of major events, problems, and personalities of North Carolina and the new nation.

5.1 Assess the severity of problems faced by the new nation and its people after independence was won.

5.2 Analyze strengths and weaknesses of North Carolina government under the Articles of Confederation.

5.3 Analyze the arguments of prominent North Carolinians for and against the ratification of the Constitution of the United States.

5.4 Analyze the strengths and weaknesses of the government framed by the Constitution of the United States, noting the extent to which liberties were granted to various groups.

5.5 Evaluate the causes and results of the War of 1812.

GOAL 6:

The learner will assess the role of North Carolina in events of the Antebellum Era.

6.1 Describe the reform movements of the era and judge the extent of North Carolina's participation in them.

6.2 Judge the significance of an emerging two-party system in antebellum North Carolina.

6.3 Analyze the effects of the Constitutional Convention of 1835 on the economic, social, and political life of North Carolina.

6.4 Describe the history and status of minorities and women in the antebellum period.

Grade 8 – North Carolina: The History of an American State

Goals and Objectives

GOAL 7:

The learner will trace the causes and events and judge the effects of Civil War and Reconstruction on North Carolina.

7.1 Trace the development of sectionalism in North Carolina and the nation, and analyze the influence of slavery on this phenomenon.

7.2 Describe the efforts of individuals and groups in North Carolina to promote or prevent the dissolution of the Union.

7.3 Analyze relationships between the governments of North Carolina and the Confederate States of America in terms of North Carolina's contributions to the war effort.

7.4 Describe strategic strengths and weaknesses of Confederate, Union, and border states.

7.5 Identify and assess the impact of major Civil War campaigns and battles on life in North Carolina.

7.6 Analyze similarities and differences between Presidential and Congressional plans for reconstructing the Union and assess their impact on various groups in North Carolina.

GOAL 8:

The learner will evaluate the effects of national economic, social, and political change on North Carolina and the South in the late nineteenth century.

8.1 Describe basic business organizations developed in the late nineteenth century and assess their impact on North Carolina.

8.2 Describe the national significance of industrialization and rapid population growth and contrast these phenomena to events in North Carolina and the South.

8.3 Evaluate the influence of nationally prominent industrial and business leaders on life in North Carolina and the nation.

8.4 Describe the political climate and the changing alignments of political parties and judge their effects on North Carolina and the nation.

8.5 Analyze the factors that promoted and sustained racial segregation in North Carolina and the South.

GOAL 9:

The learner will judge the effects of progressivism, war, and religious controversy on North Carolina.

9.1 Describe the growth of educational opportunity as it affected all citizens in the state and nation.

9.2 Analyze the role of the state in World War I within the context of the national war effort.

9.3 Trace pressures for and results of Constitutional amendments of the period for both the state and nation.

9.4 Assess the extent to which North Carolina participated in the reforms of the Progressive Era.

9.5 Judge the effects of religious controversy and social change on North Carolina and the nation.

Grade 8 - North Carolina:
The History of an American State
Goals and Objectives

GOAL 10:

The learner will judge the extent to which North Carolina and the nation shared in the problems of the Great Depression and World War II.

10.1 Link economic conditions in North Carolina to those national and international conditions that brought about the Great Depression.

10.2 Assess the impact of New Deal reforms on economic, social, and political life in North Carolina and the nation.

10.3 Analyze the reasons for the involvement of the United States in World War II and describe North Carolina's contributions to the war effort.

10.4 Explain the impact of the war on various segments of North Carolina society and on the political life of the state.

GOAL 11:

The learner will judge the continuing significance of social, economic, and political changes since 1945 and draw conclusions about their effects on contemporary life.

11.1 Describe the various ways that social change and racial and ethnic diversity affect individuals and groups living in North Carolina.

11.2 Evaluate the importance of technological innovations and advances on quality of life in North Carolina and the nation.

11.3 Evaluate the major changes and events that have affected the roles of local, state, and national governments.

11.4 Trace major events in the Civil Rights Movement and determine how this movement has changed the lives of North Carolinians.

11.5 Analyze the role of religious pluralism in contemporary economic, social, and political life.

Economic, Legal, and Political Systems in Action

Goals and Objectives

GOAL 1:

The learner will investigate issues and problems confronting the American economic, legal, and political systems.

1.1 Describe examples of recurring public problems and issues.

1.2 Analyze causes and consequences of recurring social and economic problems and issues.

1.3 Evaluate strengths and limitations of the economic, legal, and political systems in resolving problems.

1.4 Make inferences regarding relationships among economic, legal, and political problems.

1.5 Explain relationships among local, state, national, and international problems.

1.6 Compare differing points of view on the proper role of government in the personal lives of citizens.

GOAL 2:

The learner will explain rights and analyze the obligations of responsible citizenship.

2.1 Describe qualifications and procedures for voting and seeking office at the local, state, and national levels.

2.2 Analyze information on political issues and candidates for political office.

2.3 Demonstrate methods of promoting and inhibiting change through political action.

2.4 Analyze consequences of compliance or noncompliance with laws governing society.

2.5 Explain rights and freedoms available to all citizens of the United States.

2.6 Describe situations that benefit from volunteers and display a willingness to vol-unteer and undertake extra responsibilities for civic welfare at appropriate levels.

2.7 Analyze costs and benefits of jury service, voting, seeking office, and civic action in general.

2.8 Demonstrate the importance of being a responsible economic decision maker.

GOAL 3:

The learner will investigate how and why individuals and groups make economic choices.

3.1 Describe basic factors of production (land, labor, capital, and entrepreneurial skills) and know their interaction in any economic activity.

3.2 Analyze factors which contribute to increased productivity.

3.3 Explain why scarcity causes producers and consumers to make choices.

3.4 Compare examples of tradeoffs and opportunity costs of economic choices.

3.5 Analyze the impact of specialization and division of labor on various economic activities.

3.6 Explain the impact of investment in capital goods and human capital on the economy.

GOAL 4:

The learner will analyze features of the economic system of the United States.

4.1 Compare characteristics of command, market, traditional, and mixed economies.

4.2 Describe examples of how the United States economic system encourages private ownership of property and individual initiative.

4.3 Identify characteristics of markets.

4.4 Demonstrate how supply, demand, and competition affect prices and the availability of goods and services.

4.5 Assess the impact on profit of factors such as demand, product quality, management, and training.

4.6 Identify distinguishing features of economic institutions (e.g., corporations, banks, stock markets).

4.7 Explain the impact of international trade.

4.8 Explain the function of money and financial institutions in the United States economy.

4.9 Evaluate competing national economic goals and analyze the effects of these goals on various segments of society.

Economic, Legal, and Political Systems in Action

Goals and Objectives

GOAL 5:

The learner will analyze factors influencing the United States economy.

5.1 Analyze the impact of decisions such as saving, using credit, investing, and conserving resources on the economic system.

5.2 Make inferences regarding the impact of government regulation on specific economic activities.

5.3 Analyze short- and long-term trends in economic activity.

5.4 Identify examples of domestic and international economic interdependence.

5.5 Analyze short- and long-term effects of taxation and government spending on the United States economy.

5.6 Analyze the influence of environmental factors on specific economic activities.

5.7 Analyze relationships between economic conditions and political decisions.

5.8 Explain how the Gross National Product is used as an indicator of the state of the economy.

GOAL 6:

The learner will explain the function and importance of the North Carolina and United States Constitutions.

6.1 Explain how constitutions define the framework of governments.

6.2 Identify principles found in the United States Constitution which were stated in the Declaration of Independence and explored in the Federalist Papers.

6.3 Explain how constitutions grant and limit the authority of public officials and government agencies.

6.4 Describe how constitutions may be changed, and analyze the impact of specific changes.

6.5 Analyze cases which illustrate that the United States Constitution is the supreme law of the land.

6.6 Analyze cases which demonstrate how the United States Constitution and Bill of Rights protect the rights of individuals.

6.7 Identify modern controversies related to powers of the federal government that are similar to the debates between Federalists and Anti-Federalists over ratification of the United States Constitution.

GOAL 7:

The learner will explain the structure and functions of local, state, and national governments and describe their relationship.

7.1 Explain the structure, functions, and relationships of the executive, legislative, and judicial branches.

7.2 Describe services provided by selected government agencies and how they are funded.

7.3 Compare major responsibilities of the United States Congress with those of the North Carolina General Assembly and local governing bodies.

7.4 Analyze costs and benefits of government functions.

7.5 Identify key government officials, how they are chosen, and their duties and responsibilities.

GOAL 8:

The learner will explain why laws are needed and how they are enacted, implemented, and enforced.

8.1 Illustrate the need for law in society.

8.2 Compare examples of criminal, civil, constitutional, and administrative law.

8.3 Analyze stages involved in the legislative process.

8.4 Analyze methods used to inform citizens of the purpose and meaning of laws.

8.5 Describe the role of the executive branch in the implementation of laws and policies.

8.6 Compare responsibilities, jurisdictions, and methods of individual law-enforcement agencies.

8.7 Evaluate various methods used by society to deal with criminal and anti-social behaviors.

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Economic, Legal, and Political Systems in Action

Goals and Objectives

GOAL 9:

The learner will explain how the political and legal systems provide for balancing competing interests and resolving conflicts.

9.1 Evaluate the role of debate, consensus, compromise, and negotiation in resolving conflicts.

9.2 Describe the adversarial nature of judicial processes.

9.3 Evaluate the role of debate and compromise in the legislative process.

9.4 Identify the jurisdiction of state and federal courts.

9.5 Analyze roles of individual citizens, political parties, the media, and other interest groups in public policy decisions, dispute resolution, and government action.

9.6 Explain how local government agencies balance interests and resolve conflicts.

GOAL 10:

The learner will evaluate the influence of ethical and moral principles and religious beliefs on the development of our economic, legal, and political systems.

10.1 Analyze individual and group decisions on the basis of a variety of standards including aesthetic, pragmatic, and ethical.

10.2 Analyze examples of conduct by public officials, corporate officers, and private citizens in a variety of situations and evaluate their conduct in terms of given criteria.

10.3 Evaluate positions on a variety of issues against given criteria.

10.4 Analyze the meaning and influence on our society of the religion clauses of the First Amendment to the United States Constitution.

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World History
Goals and Objectives

GOAL 1:

The learner will analyze the onset and development of cultural institutions in early civilizations.

1.1 Cite major developments from human origins to the rise of early civilizations.

1.2 Trace developments and assess the achievements of early civilizations in Southwest Asia and North Africa.

1.3 Trace developments and assess the achievements of early civilizations in South and East Asia.

1.4 Compare the achievements of early civilizations in various settings.

GOAL 2:

The learner will analyze classical Eurasian civilizations and assess their enduring contributions.

2.1 Trace the roots and recognize the achievements of Greek civilization through the Hellenistic period.

2.2 Describe the achievements of the Roman Empire and judge their significance for Europeans after the fall of Rome.

2.3 Judge the importance of India as a hub of world trade and culture and as a religious center during its Golden Age.

2.4 Elaborate on the distinctive achievements of Chinese civilization.

2.5 Describe and compare major Chinese, Indian, and Judeo-Christian beliefs.

GOAL 3:

The learner will investigate significant events in and assess characteristics of traditional civilizations (A.D. 500-1750).

3.1 Describe the legacies of Byzantine civilization for both Western and Eastern Europe.

3.2 Trace the rise of Islam and cite the achievements of Islamic civilization.

3.3 Elaborate on the achievements of Chinese and Japanese civilizations, noting their scientific innovations.

3.4 Assess the importance of geographic isolation from Eurasia on the development of African empires and trading states.

3.5 Evaluate the contributions of the major civilizations of the Americas during the pre-Columbian epoch.

GOAL 4:

The learner will investigate significant events in and assess characteristics of medieval Europe (476-1400).

4.1 Trace events in Western Europe from the fall of Rome to the emergence of nation-states.

4.2 Analyze the extent to which religion integrated economic, political, and social life in medieval Europe.

4.3 Assess the influence of contacts such as the crusades on different regions of Europe as well as on other societies.

4.4 Assess the influence of emerging urban centers and universities on medieval society.

GOAL 5:

The learner will trace events and evaluate the significance of movements associated with the rise of the West (1400-1914).

5.1 Trace social, political, and cultural changes associated with the Renaissance, Reformation, and rise of nation-states in Europe (1400-1650).

5.2 Chart European expansion into other world areas and cite effects of this expan-sion on Africans, Native Americans, Asians, and Europeans (1400-1800).

5.3 Cite major costs and benefits of the scientific and commercial revolutions for different segments of European society (1600-1800).

5.4 Trace the progress of the Industrial Revolution and assess its effects on Europe and the World (1750-1914).

5.5 Analyze the causes and assess the influence of political revolutions in England, North America, and France on individuals, governing bodies, and church-state relations (1640-1815).

5.6 Analyze the impact of European expansion on societies in the Western Hemisphere.

GOAL 6:

The learner will examine causes and consequences of Europe's world domination (1750-1945).

6.1 Analyze the forces that both caused and allowed European nations to acquire colonial possessions and trading privileges in Africa, Asia, and the Americas.

World History
Goals and Objectives

6.2 Assess the influence of the church, aristocracies, and colonial export economies on Latin American society.

6.3 Compare the effects of voluntary and forced Westernization on societies in Russia, North Africa, and Southwest Asia.

6.4 Describe the changes that resulted when European commercial networks were replaced with political domination by the late nineteenth century.

6.5 Evaluate the effects of colonialism on African, Asian, and European societies.

GOAL 7:
The learner will analyze causes and effects of world events in the early twentieth century (1914-1945).

7.1 Analyze the causes and assess the consequences of World War I.

7.2 Judge the causes and effects of the Russian Revolution for Russia and the world.

7.3 Evaluate the causes and consequences of the Great Depression on industrial societies.

7.4 Evaluate World [illegible] the end of one era and the beginning of another.

GOAL 8:
The learner will analyze problems and assess prospects of an interdependent world (1945-present).

8.1 Trace the development of relationships between former Soviet Republics and the United States and cite consequences of these relationships for the world.

8.2 Analyze economic and political recovery in Japan and Europe.

8.3 Evaluate the effectiveness of independence movements in Asia and Africa as challenges to the European world domination established in the nineteenth century.

8.4 Judge the effects of European domination on societies in Africa, Asia, and Southwest Asia as they reestablished their own economies and institutions of self-government.

8.5 Assess the degree to which the international community is capable of resolving recurring global dilemmas.

GOAL 9:
The learner will draw relationships between continuity and change in explaining human history.

9.1 Analyze and trace developments in literary, artistic, and religious traditions over time as legacies of past societies.

9.2 Cite those phenomena which represent revolutionary breaks with the past and assess their impact on human history.

9.3 Assess the degree to which discoveries, innovations, and technologies have accelerated change.

9.4 Distinguish what is meant by "civilized behavior" or "civilization" in different times and places and link such meanings to the societies of which they were or are a part.

World Geography
Goals and Objectives

GOAL 1:

The learner will analyze relationships between people and the locations of places.

1.1 Describe the locations of places using relative terms.
1.2 Describe the locations of places using formal reference systems.
1.3 Analyze ways that locations influence relationships between people and places.

GOAL 2:

The learner will examine physical characteristics of places.

2.1 Define and illustrate terms used to describe physical characteristics of places.
2.2 Compare the physical characteristics of places in different regions of the world.

GOAL 3:

The learner will analyze human characteristics of places.

3.1 Describe human characteristics of places.
3.2 Explain how different culture groups view the use and modification of the physical environment.
3.3 Analyze factors that affect population distribution.

GOAL 4:

The learner will examine relationships between the cultural and physical geography of a region and explain how they affect and are affected by historic events.

4.1 Explain how the physical and human characteristics of place combine to create cultural identity.
4.2 Examine the role of culture and geography in various historical events.
4.3 Analyze the impact of historical events on geography and culture.
4.4 Evaluate positive and negative aspects of change over time.

GOAL 5:

The learner will investigate ways people interact with the environment.

5.1 Describe effects of climate, landforms, vegetation, soils, and natural resources on human activity.
5.2 Describe ways people interact with the environment to satisfy their wants and needs.
5.3 Elaborate on ways people modify and adapt to the environment that reveal their cultural values.
5.4 Explain how the use of technology changes the environment.
5.5 Analyze ways environmental changes may influence regional or global systems.

GOAL 6:

The learner will demonstrate that localities, states, and nations are interdependent.

6.1 Identify linkages involving transportation and communication.
6.2 Examine reasons for the interdependence of localities, states, and nations.
6.3 Analyze the impact of a locality's use of resources and technology on other places.
6.4. Analyze conflicts involving scarcity, barriers to trade, and discrepancies in technology.
6.5 Evaluate alliances (regional and international) created to promote interdependent relationships.

GOAL 7:

The learner will evaluate the significance of the movement of people, goods, and ideas among various world regions.

7.1 Identify conditions that cause movements of people, goods, and ideas.
7.2 Describe how communication and transportation influence the flow of ideas and resources from place to place.
7.3 Illustrate how cultures grow and change through the movement of people, goods, and ideas.
7.4 Examine impacts of cultural barriers (religion, language, and politics) on the movement of people, goods, and ideas.
7.5 Analyze ways that movement influences the interdependence of regions and people around the world.

GOAL 8:

The learner will demonstrate that regions are basic units of geographic study and explain differences among regions of the world.

8.1 Generate criteria used to define a region.
8.2 Identify major regions of the world and list the criteria used to differentiate each region.
8.3 Examine factors that may produce change or promote stability in a region.
8.4 Analyze factors that produce conflict and/or cooperation in a region or among regions.

World Geography
Goals and Objectives

8.5 Develop an appreciation of the racial, ethnic, cultural, and religious diversity of a region.

8.6 Examine similarities and differences within and among culture regions.

GOAL 9:

The learner will employ geographic understandings of world regions in analyzing problems and opportunities of developed and developing regions.

9.1 Identify criteria for evaluating the social and economic development of regions.

9.2 Distinguish between developed and developing regions.

9.3 Analyze development in a variety of world regions and compare costs and benefits.

World Cultures
Goals and Objectives

GOAL 1:

The learner will generalize that all people live within a variety of cultural arrangements.

1.1 Generate a working definition of culture.
1.2 Analyze elements of a culture.
1.3 Elaborate on distinctions among sub-cultures, dominant cultures, regional cultures, and world-wide cultures.

GOAL 2:

The learner will recognize the family as the most enduring social unit in any culture.

2.1 Analyze and assess the cultural usefulness of various forms of family organization.
2.2 Elaborate on various socially important functions that families perform, including the maintenance of cultural norms and mores.
2.3 Summarize the importance of kinship bonds to a culture.

GOAL 3:

The learner will analyze the interaction of a culture with its physical environment.

3.1 Describe the absolute location of the culture and its location relative to other pertinent cultures.
3.2 Examine the possibilities and constraints of the physical environment as seen by different cultural groups.
3.3 Explain how the physical and human characteristics of place combine to influence cultural identity.
3.4 Assess the extent to which people reveal their cultural values as they modify and adapt to the environment.

GOAL 4:

The learner will elaborate on the importance of material expressions of a culture.

4.1 Identify and describe material expressions of the culture.
4.2 Analyze material aspects of the culture in terms of their usefulness to the culture.
4.3 Engage in cross-cultural comparisons of such phenomena as architecture, visual arts, dress, sports, and games.

GOAL 5:

The learner will assess the importance of non-material expressions of a culture.

5.1 Describe how such cultural expressions as religion, education, and language both maintain and communicate culture.
5.2 Analyze non-material expressions of the culture in terms of their usefulness to the culture.
5.3 Engage in cross-cultural comparisons of such phenomena as religion, education, and language.

GOAL 6:

The learner will generalize that all cultures address the central problem of scarcity as they consume, produce, and trade.

6.1 Identify distinguishing characteristics of the economic systems of various cultures.
6.2 Compare the economic systems of various cultures using criteria such as productivity, stability, and economic justice.
6.3 Judge the effectiveness of various economic systems in addressing the problem of scarcity.

GOAL 7:

The learner will conclude that all cultures legitimize power to provide for security and internal order.

7.1 Identify distinguishing aspects of the political systems of various cultures.
7.2 Compare the political systems of various cultures using such criteria as individual rights, stability, the role of factions, and transfer of power.
7.3 Judge the effectiveness of various political systems in addressing problems of security and internal order and in resolving conflicts between and among cultures.

GOAL 8:

The learner will analyze ways cultures change.

8.1 Identify innovation, diffusion, and reinterpretation as means of cultural change and apply these concepts appropriately to specific situations.
8.2 Analyze the impact of historical events on cultural institutions.
8.3 Assess the importance of rate of change and migration (movement of people) as factors in cultural responses to change.

World Cultures

Goals and Objectives

GOAL 9:

The learner will conclude that all cultures exist within the "Global Culture" created by technology and are affected by the emerging challenges of that culture.

9.1 Describe significant characteristics of the "global culture" created by technological changes and assess the degree to which given cultures or sub-cultures participate in it.

9.2 Judge the importance of cultural values as they affect relationships between and among cultures.

9.3 Analyze current issues such as ecological/environmental concerns, political instability, and nationalism as emerging challenges for the "global culture."

United States History

Goals and Objectives

GOAL 1:

The learner will analyze those elements in the American colonial experience that led to separation from England.

1.1 Describe how geographic diversity influenced economic, social, and political life in colonial North America.

1.2 Describe the contributions of various racial, ethnic, and religious groups including African Americans and Native Americans to the development of a new culture.

1.3 Elaborate on the sources of American nationalism.

1.4 Distinguish between immediate and long-term causes of the American Revolution.

1.5 Assess the importance of military engagements, personalities, and geo-political factors in the defeat of the British.

GOAL 2:

The learner will apply ideas of self-government as expressed in America's founding documents.

2.1 Trace the development of concepts of self-government in British North America from the Mayflower Compact to the Declaration of Independence.

2.2 Associate ideas in the founding documents with their European origins.

2.3 Analyze the Declaration of Independence and the Constitution of the United States as expressions of self-government.

2.4 Evaluate the arguments of The Federalist and The Anti-Federalist papers as expressions of differing theories about self-government.

2.5 Judge the extent to which the Bill of Rights extended the Constitution.

GOAL 3:

The learner will judge the effectiveness of the institutions of the new nation in completing its independence (1781-1815).

3.1 Identify major domestic problems of the nation under the Articles of Confederation and judge the extent to which they were resolved by the new Constitution.

3.2 Judge the extent to which the institutions of the new nation protected the liberties of all its inhabitants.

3.3 Trace the development of religious liberty and toleration in the new nation.

3.4 Analyze the effects of territorial expansion and the admission of new states to the Union.

3.5 Assess commercial and diplomatic relationships with Britain, France, and other nations.

3.6 Evaluate the extent to which the United States was "a nation at risk" until 1815.

GOAL 4:

The learner will assess the contending forces of nationalism and sectionalism in the period 1815-1850.

4.1 Map westward expansion and make inferences about its importance to African Americans and Native Americans.

4.2 Analyze economic developments and judge their effects on nationalism and sectionalism.

4.3 Assess political events and personalities in terms of their influence on nationalistic or sectional trends.

4.4 Analyze literary and artistic movements of the period as contributors to nationalism and sectionalism.

4.5 Evaluate the role of religion in the debate over slavery and in other social movements and changes of the period.

GOAL 5:

The learner will evaluate the Civil War and Reconstruction as an affirmation of the power of the national government.

5.1 Elaborate on economic, social, and political conditions in the decade preceding the Civil War.

5.2 Analyze long-term and immediate causes of the war and assess the extent to which slavery was a cause of the conflict.

5.3 Trace important military and political events of the war period, and judge their significance to the outcome of the conflict.

5.4 Judge immediate and long-term effects of Reconstruction on the daily lives of people as well as on the politics and economy of the former Confederate states.

GOAL 6:

The learner will interpret economic, social, and political trends of the late nineteenth and early twentieth centuries.

6.1 Describe innovations in technology and business practices and assess their impact on the economy.

6.2 Make inferences about the influence of immigration and rapid industrialization on urban life.

6.3 Trace the development of labor unions and judge their effects on economic arrangements and the lives of working people.

United States History

Goals and Objectives

6.4 Evaluate the effects of racial segregation on various regions and segments of American society.

6.5 Trace the rise and decline of Populism and Progressivism and judge their effectiveness as economic, social, and political movements.

6.6 Analyze the influence of growing religious pluralism on American society.

GOAL 7:

The learner will analyze the causes and effects of United States involvement in international affairs.

7.1 Trace the emergence of the United States as an increasingly significant international power in the late nineteenth and early twentieth centuries.

7.2 Analyze the causes of United States involvement in World War I, and assess the effects of the war on the United States and other nations.

7.3 Assess the significance of the war experience on United States foreign and domestic policies of the 1920s and 1930s.

GOAL 8:

The learner will appraise the economic, social, and political changes of the decades of the "Twenties" and "Thirties."

8.1 Elaborate on the cycle of economic boom and bust in the "twenties" and "thirties" and analyze the extent of prosperity for different segments of society.

8.2 Make inferences about social, intellectual, and technological change based on an analysis of lifestyles of the period.

8.3 Describe challenges to tradition in religion, race, and gender during the period.

8.4 Assess the impact of New Deal reforms in enlarging the role of the federal government in American life.

GOAL 9:

The learner will analyze and evaluate the significance of causes, events, and effects of the World War II Era.

9.1 Investigate reasons for the expansion of totalitarian governments during the period.

9.2 Trace the course of events that resulted in a new outbreak of worldwide war and analyze the role of the United States in them.

9.3 Identify major campaigns and personalities from the World War II era, and assess their importance to the conduct of the war.

9.4 Describe and analyze the effects of the war on American economic, social, and political life.

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United States History

Goals and Objectives

GOAL 10:

The learner will trace economic and social developments and assess their significance for the lives of Americans since 1950.

10.1 Identify technical innovations that have significantly affected American life and judge the importance of their influence on our behavior.

10.2 Elaborate on the suburbanization of American society and make inferences about its importance to our economic and social institutions.

10.3 Trace major events of the civil rights movement and evaluate the impact of the movement on institutions and the lives of citizens.

10.4 Assess the importance of growing religious pluralism and racial and ethnic diversity in American society.

10.5 Analyze the course of the United States economy since 1950.

GOAL 11:

The learner will analyze changes in American political life since 1950.

11.1 Trace changes in political party alignment and voter behavior.

11.2 Analyze changing relationships between states and the federal government as the role of the federal government continued to expand.

11.3 Analyze relationships and actions of the three branches of the federal government in terms of their influence on the lives of citizens.

11.4 Assess the influence of phenomena such as television on the conduct of American politics.

GOAL 12:

The learner will evaluate the conduct of United States foreign policy since 1950.

12.1 Trace the course of the "cold war" and judge its impact on American society.

12.2 Elaborate on changes in the direction of foreign policy toward various world areas over the period.

12.3 Examine the role of organizations established to maintain peace and judge their continuing effectiveness.

12.4 Identify causes of United States involvement in foreign wars since World War II and judge the influence of our involvement on American society.

Psychology

Goals and Objectives

GOAL 1:

The learner will distinguish psychology from other social sciences and elaborate on linkages between psychology and other social sciences.

1.1 Describe the development of various schools or theories of psychology.

1.2 Distinguish similarities and differences between psychology and other social sciences.

GOAL 2:

The learner will analyze the influences of heredity and environment on human behavior.

2.1 Summarize inherited characteristics.

2.2 Describe environmental influences on human development.

2.3 Analyze the effects of a selected hereditary or environmental influence on a given human behavior.

GOAL 3:

The learner will examine aspects of human behavior.

3.1 Analyze similarities and differences in human behavior at different stages in the life cycle.

3.2 Assess the effects of personality and intelligence on human behavior.

3.3 Judge the importance of emotion and motivation on human behavior.

GOAL 4:

The learner will analyze factors influencing learning and thinking processes.

4.1 Describe various learning processes and factors influencing each.

4.2 Elaborate on factors contributing to efficient and effective learning.

4.3 Analyze various ways of thinking (e.g., critical, creative).

GOAL 5:

The learner will assess the effects of social groups
on individual behaviors.

5.1 Describe kinds and effectiveness of small groups.

5.2 Analyze the effects of phenomena such as male/female roles and peer-group influences on the behavior of individuals.

5.3 Judge the importance of social interaction for individual behaviors.

GOAL 6:

The learner will elaborate on ways of maintaining and restoring mental health.

6.1 Distinguish among a variety of strategies for coping with conflicts, frustration, and stress.

6.2 Describe personality disorders, therapies for dealing with them, and the effectiveness of various therapies.

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Sociology
Goals and Objectives

GOAL 1:

The learner will describe the various schools of sociological thought and trace their progress.

1.1 Identify historic backgrounds of modern-day sociology.
1.2 Distinguish among various schools of sociological thought.
1.3 Describe similarities and differences between sociology and other social sciences.

GOAL 2:

The learner will elaborate on the nature of culture and analyze conformity with and deviance from cultural mores.

2.1 Generate a definition of culture.
2.2 Distinguish between conformity with and deviation from cultural mores.
2.3 Analyze instances of cultural conformity and deviance.

GOAL 3:

The learner will analyze social structure.

3.1 Describe social roles, their development, and their relationship to social groups.
3.2 Distinguish between formal and informal groups and assess their importance.
3.3 Compare social stratification in traditional and industrial societies and judge its importance.

GOAL 4:

The learner will analyze the functions and assess the effectiveness of important social institutions.

4.1 Elaborate on important social institutions.
4.2 Analyze the functions of given social institutions.
4.3 Assess the value of social institutions for given elements of society and for society as a whole.

GOAL 5:

The learner will analyze the socialization process.

5.1 Describe the importance of socialization to society.
5.2 Elaborate on the functions and roles of socializing agents.
5.3 Trace the socialization process, noting formal and informal processes.

GOAL 6:

The learner will assess continuity and change in social groups.

6.1 Identify conditions causing continuity or change for social groups.
6.2 Elaborate on ways groups resist and accommodate change.
6.3 Evaluate the effects of change on given groups.

GOAL 7:

The learner will elaborate on and analyze major social problems.

7.1 Describe major social problems.
7.2 Analyze causes and effects of given social problems.

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Law and Justice
Goals and Objectives

GOAL 1:

The learner will analyze changes in the law and recognize the dynamic nature of law.

1.1 Trace changes in law.
1.2 Analyze changes in the law.
1.3 Elaborate on the dynamic nature of the legal system of the United States.

GOAL 2:

The learner will describe the civil and criminal justice systems, analyze their operations, and assess their effectiveness.

2.1 Distinguish similarities and differences in the civil and criminal justice systems.
2.2 Compare the operations and processes of the civil and criminal justice systems.
2.3 Summarize issues and problems confronting the civil and criminal justice systems and assess the effectiveness of those systems in resolving them.

GOAL 3:

The learner will distinguish state from federal judicial systems and analyze relationships between them.

3.1 Describe similarities and differences between state and federal court systems.
3.2 Elaborate on structural and informal relations between state and federal systems.
3.3 Explain how and under what circumstances cases move between state and federal jurisdictions.

GOAL 4:

The learner will analyze roles and responsibilities and assess the effectiveness of local, state, and federal law-enforcement agencies.

4.1 Distinguish similarities and differences among local, state, and federal law-enforcement agencies.
4.2 Describe the responsibility and jurisdiction of any given law-enforcement agency.
4.3 Assess working relationships among law-enforcement agencies at various levels.

GOAL 5:

The learner will assess the effectiveness of the corrections system in deterring criminal behavior.

5.1 Distinguish between civil and criminal penalties and explain the rationale for each.
5.2 Elaborate on options open to judges and juries in the sentencing process.
5.3 Analyze various alternatives to incarceration.
5.4 Judge the effectiveness of the corrections system in rehabilitating incarcerated persons and deterring crime.

GOAL 6:

The learner will analyze conflicts resulting from competing interests, conflicting laws, and conflicting interpretations of the Constitution.

6.1 Analyze constitutional changes and Supreme Court decisions affecting individuals and population groups.
6.2 Summarize competing interests, conflicting laws, and conflicting interpretations.
6.3 Assess the importance of given constitutional conflicts for individuals, groups, and society as a whole.

Economics
Goals and Objectives

GOAL 1:

The learner will analyze the importance of scarcity as the central economic problem from which all others flow.

1.1 Generate a definition of scarcity.
1.2 Analyze examples of scarcity.
1.3 Elaborate on the importance of scarcity.

GOAL 2:

The learner will compare economic systems, their institutions, and their modes of decision making.

2.1 Describe various economic systems and their institutions.
2.2 Distinguish among the modes of decision making in various economic systems.
2.3 Compare institutions and modes of decision making in various economic systems as expressions of the values of those systems.

GOAL 3:

The learner will analyze the fundamental characteristics of the economic system of the United States.

3.1 Elaborate on the characteristics of the economic system of the United States.
3.2 Determine how various aspects of the economic system relate to each other.
3.3 Relate fundamental institutions of the United States economy to the economies of other nations.

GOAL 4:

The learner will assess the impact of governmental intervention and regulation in various economic systems.

4.1 Describe formal and informal governmental intervention and regulation in economic systems.
4.2 Elaborate on reasons for governmental intervention and regulation of various economies.
4.3 Compare and evaluate the effects of varying amounts of governmental regulation and intervention in economic systems.

GOAL 5:

The learner will suggest how a variety of issues arising from the operation of a market economy may be addressed.

5.1 Explain issues arising from the operation of a market economy.
5.2 Analyze issues and problems of market economies.
5.3 Propose solutions to issues and problems of market economies.

GOAL 6:

The learner will assess the extent to which the economy of the United States influences and is influenced by the economies of other nations.

6.1 Describe relationships between the economy of the United States and those of other nations.
6.2 Analyze relationships between economic systems of other nations and that of the United States.
6.3 Judge the importance of international economic interdependence for the United States economy and for American citizens.

Government

Goals and Objectives

GOAL 1:

The learner will trace the origins of constitutional principles and the foundations of the American governmental system and assess their development through American history.

1.1 Elaborate on basic principles of the Constitution of the United States and their development over time.

1.2 Analyze those elements that make up the foundations of the American governmental system.

1.3 Assess constitutional changes and their implications for the American governmental system.

GOAL 2:

The learner will analyze structure, history, and functioning of the legislative, executive, and judicial branches of state and federal governments.

2.1 Describe the structure of the legislative, executive, and judicial branches of state and federal governments.

2.2 [illegible] history of the legislative, executive, and judicial branches of state and federal governments.

2.3 Analyze the functioning of the legislative, executive, and judicial branches of state and federal governments.

GOAL 3:

The learner will trace the enactment, implementation, and enforcement of state and federal laws.

3.1 Elaborate on how state and federal laws are enacted.

3.2 Summarize how state and federal laws are implemented.

3.3 Assess the enforcement of state and federal laws.

GOAL 4:

The learner will analyze decision-making processes in executive, legislative, and judicial branches of governments.

4.1 Describe executive, legislative, and judicial decision-making processes in state and federal governments.

4.2 Compare decision-making processes in executive, judicial, and legislative branches of governments.

4.3 Analyze similarities and differences in decision-making processes in the United States and in governments of other nations.

GOAL 5:

The learner will assess the importance of political parties and interest groups in the formation of public opinion influencing governmental processes.

5.1 Summarize the history, structure, and functions of political parties in the United States.

5.2 Elaborate on the variety, tactics, and influence of interest groups in the formation of public opinion.

5.3 Judge the influence of political parties and/or interest groups in the workings of government.

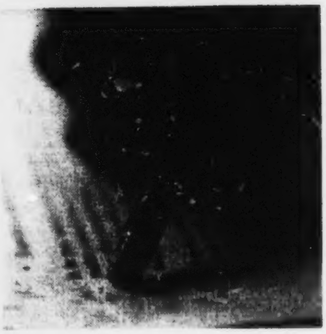
GOAL 6:

The learner will analyze relationships between state and federal governments and between the government of the United States and those of other nations.

6.1 Elaborate on formal and informal relationships between state and federal governments.

6.2 Trace changes in relationships between state and federal governments over time.

6.3 Analyze formal and informal means of interacting with the governments of other nations.



WORKFORCE DEVELOPMENT

Standard Course of Study and Grade Level Competencies

K-12

WORKFORCE DEVELOPMENT

Public Schools of North Carolina
Department of Public Instruction

FOREWORD

This document has been prepared to assist local school systems in planning effective and comprehensive workforce development education programs. It contains information about planning, required resources, instructional guidelines, and program area offerings.

This document reflects the need for local school systems to have flexibility to accommodate varying local patterns of organization, resources, and needs. It has been prepared with input from over 340 parents or business/industry representatives, 150 local school administrators, and 2,000 teachers. We appreciate their invaluable input and suggestions.

We believe that this document will have a positive influence on thousands of North Carolina students who take vocational and technical courses. As a result, the economic development of our State will also be enhanced.

June S. Atkinson

June S. Atkinson
Head, Workforce Development
and Assistant Director, K-12
Division of Instructional Services

The Programs of Study and Support Services Guide was approved by the State Board of Education on October 2, 1997.

PREFACE

The *Programs of Study* is to be used to plan workforce development education programs beginning with the 1998-99 school year.

Part I provides a program description for workforce development education programs. Subparts include information related to planning, resources, and guidelines for organizing and managing instruction.

Part II highlights specific planning information for each workforce program area. The content is outlined by program descriptions, major program objectives, scope and sequence, and course descriptions. Included with the Career Development Section is a description of industry-education coordination.

Part III describes special population services. This section has a program description, objectives, description of eligible target groups, definitions of disabling conditions, service delivery strategies, and enrollment guidelines.

Some local situations may require other modifications. When these occur, a modification procedure has been developed and is included in the appendices. Vocational student organizations are also described in the appendices.

WORKFORCE DEVELOPMENT EDUCATION
PROGRAMS OF STUDY
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Activities and procedures within Workforce Development Education are governed by the philosophy of simple fairness to all. Therefore, the policy of the Division is that all operations will be performed without regard to race, sex, color, national origin, or handicap.

Part I
Workforce Development Education In North Carolina

PLANNING FOR WORKFORCE DEVELOPMENT EDUCATION

Mission and Purpose

The mission of workforce development education is to help empower students for effective participation in an international economy as world-class workers and citizens.

Workforce development education fulfills this mission by:

1. Preparing students for further vocational and technical education and lifelong learning.
2. Preparing students for initial and continued employment.
3. Assisting students in making educational and career decisions.
4. Applying and reinforcing related learning from other disciplines.
5. Assisting students in developing decision-making, communication, problem-solving, leadership, and citizenship skills.
6. Preparing students to make informed consumer decisions and apply practical life skills.
7. Making appropriate provisions for students with special needs to succeed in workforce development education programs.

Program Areas

Competency-based courses are offered in eight program areas, with each area having school-based and work-based learning opportunities.

1. Agricultural Education
2. Business Education
3. Career Development
4. Family and Consumer Sciences Education
5. Health Occupations Education
6. Marketing Education
7. Technology Education
8. Trade and Industrial Education

Combined with other academic offerings, workforce development education assists all enrollees in career goals. Students are to have a career development plan outlining academic and workforce development courses to be taken to meet a tentative career objective.

Goals

Goals Common to All Workforce Development Areas*

Programs in workforce development are designed to contribute to the broad educational achievement of students. These workforce programs contribute to students being able to

1. Identify, organize, plan, and allocate resources – time, money, materials and facilities, and human resources.
2. Work with others by participating as a team member, serving clients/customers, negotiating, and working with diversity.

3. Acquire and use information.
4. Work with and operate effectively within social organizations and technological systems.
5. Work with a variety of technologies.
6. Contribute to the development of reading, writing, listening, speaking, and mathematical skills.
7. Contribute to the development of thinking creatively, making decisions, solving problems, and reasoning.

* These goals are based on the Secretary's Commission on Achieving Necessary Skills (SCANS) Report.

State Board of Education Responsibilities

The State Board of Education is responsible for providing direction and leadership to workforce development education. The State Board of Education's guidelines are outlined in the *ABCs of Public Education, Basic Education Program,* and the *Master Plan for Workforce Development Education.*

ABCs

The ABCs has three major emphases:
1. Accountability: Schools are held accountable for student progress. The teachers and principal at each school are responsible for how well they teach children.
2. Basics: Schools are to focus on the care of a good, solid education: reading, writing, and mathematics.
3. Control: Individual schools are given maximum flexibility to decide where to channel their efforts and their resources to achieve success.

The *Basic Education Program* for North Carolina's Public Schools outlines the curriculum which should be provided in all schools throughout the state. Workforce development education is one of the curriculum areas included.

Master Plan

The *Master Plan for Workforce Development Education* establishes the philosophy and framework of the State Board of Education for workforce development education. The framework of the State Board of Education includes the following:
1. Courses should be available to students without regard to race, sex, national origin, or handicap.
2. Teaching transferable and thinking skills is important in preparing students to adapt to a changing work environment.
3. Instruction should provide opportunities for students to apply communication, computational, scientific, and other academic skills to specific areas.
4. Input from local advisory committees, employment data, community surveys, student surveys, and student follow-up are necessary in planning, implementing, and evaluating local programs.

5. Students are furnished written documentation detailing specific competencies achieved through participation in a workforce development education program.
6. Counselors and teachers should coordinate programs with business and industry to ensure that educational objectives match work requirements. Additionally, work experiences achieved through shadowing, internships, cooperative on-the-job training, or apprenticeships ensure an easy transition from a student to a competent, wage earner.
7. All students in workforce development programs have an opportunity to develop and extend their learnings through participation in active vocational student organizations. The program of work for each organization should be based on instructional competencies and be an integral part of the program.
8. Strong career development, guidance, counseling, job placement, and follow-up services are to be available to assist students in planning for their careers and enrolling in appropriate courses. All students should have tenative career development plans.
9. Parents are to be actively involved in helping their children choose courses.
10. Full cooperation, communication, and coordination between secondary schools and community colleges are necessary for each student advancing to a higher education level.

Vocational Student Organizations

A vocational student organization (VSO) is an integral part of each program area's curriculum. The VSOs are:

- Career Exploration Clubs of North Carolina (CECNC) for Middle Grades Students
- DECA for Marketing Education
- Future Business Leaders of America (FBLA) for Business Education
- FFA for Agricultural Education
- Future Homemakers of America/Home Economics Related Occupations (FHA/HERO) for Family and Consumer Sciences Education
- Health Occupations Student Association (HOSA) for Health Occupations Education
- Technology Student Association (TSA) for Technology Education
- Vocational Industrial Clubs of America (VICA) for Trade and Industrial Education

Any student enrolled in a workforce development course is eligible for membership in the vocational student organization associated with that program.

VSOs develop citizenship, technical, leadership, and teamwork skills essential for students who are preparing for the workforce and further education. They enhance students' civic awareness and provide opportunities for developing social competencies and a wholesome attitude about living and working.

VSOs provide a unique instructional method for attaining the competency goals and objectives identified in each course. Their activities are considered a part of the instructional day when they are directly related to the competencies and objectives in course blueprints.

Determining Program Offerings

Workforce development education planners determine local program offerings by considering the following:

1. Availability of resources.
2. Changes in population characteristics.
3. Labor needs in new and emerging occupations, including small business ownership.
4. Labor needs in existing occupations with greater than average anticipated growth.
5. Rates of increase in employment projected for the service sector of the public and private economy.
6. Projected increase in occupations requiring technical skills.
7. Impact of technology on consumer decision making.
8. Impact of managing personal, family, and work lives.
9. Community college offerings.

When determining local program offerings for a school or a total school system, local planning personnel should organize a comprehensive and appropriate sequence of workforce offerings for students enrolled in grades 6-12. These offerings should be based on an assessment of student needs, interests, and aspirations, labor market demands, and projections.

Evaluating Program Accomplishments

Consistently high quality local programs can be ensured through a system of continuing qualitative and quantitative evaluation and reporting of programs, services, and activities. The State Board of Education has the primary responsibility for statewide evaluation of workforce development education programs.

Local program evaluation is based on State Board of Education's adopted performance measures and standards. These performance measures are based on access to, progress through, and success in workforce development education. All enrollees, including members of special populations, are assessed by these measures and standards at the local level. Annually, local school systems must determine if these standards are met, or if substantial progress is being made to meet the standards. Local evaluations are disaggregated by courses, programs, sites, and special population categories.

Student Achievement and Progress

Student achievement and progress may be evaluated by using criterion-referenced measures such as:

- Written and oral pre- and post-assessments.
- Performance tests with teacher or employer rating checklists.
- Performance gains.
- Observation of performance in class and on-the-job settings by teachers and job supervisors.
- Evaluation of projects and products completed by the student, using checklists and rating scales.
- Follow-up studies with students and employers.

Testing instruments and procedures may be designed locally or obtained from another source. Sources include the computerized competency/test-item banks available from the Workforce Development Education, North Carolina Department of Public Instruction. This resource is a part of the Vocational Education Competency Achievement Tracking System (VoCATS).

Reports of enrollment, student and employer follow-up, and work-based learning hours and wages constitute data bases for local program planners and state staff. Others sources include labor market, demographic, teacher, student, and program data. These data sets should be used in making programmatic decisions, for program review and improvement, for guidance, and as a basis for marketing workforce development education to internal and external audiences.

COORDINATION WITH COMMUNITY/TECHNICAL COLLEGES

Coordination

Coordinating secondary and community/technical college programs is important in helping students make a smooth transition from one level of instruction to another without their experiencing delays or loss of credit. Articulation models include time-shortened, advanced skills, and technical preparation associate degree programs.

Time-shortened Programs

Time-shortened programs eliminate unnecessary redundancy in educational experiences. They grant advanced placement to high school students entering a postsecondary program. As a result, students complete an occupational specialty or associate degree more quickly than a normal postsecondary program would allow.

Advanced Skills Programs

Advanced skills programs streamline educational experiences for grades 11-14 in order to incorporate more advanced training than a traditional program would provide. It allows students who have mastered academic or vocational skills in high school to bypass some introductory postsecondary courses, thus allowing more time for advanced skills courses.

College Tech Prep

A college tech prep program is a sequential course of study designed to meet the need for graduates to have more technically-oriented educational preparation. Through a blending of higher level academic and workforce development courses, college tech prep prepares students for increasingly sophisticated technical occupations. It combines English, mathematics, science, workforce development course sequences, and other graduation requirements. *See Appendix C for the State Board of Education's college tech prep requirements.*

College Tech prep combines secondary and post-secondary programs that:

- Provide technical preparation in at least one field of engineering technology, applied science, mechanical, industrial, or practical art or trade, or agriculture, health, or business.
- Build student competence in mathematics, science, and communications (including applied academics) through a sequential course of study.
- Lead to placement in employment.

Any model should have:

- Leadership and commitment from top administrators.
- Early faculty involvement.
- Written articulation agreements.
- Open and frequent communications.
- Clearly defined responsibilities and goals.
- Clearly identifiable courses of study.
- Competency-based curriculum.
- Common focus on mutual goals.
- Integration of academic and workforce development education.
- Curriculum alignment.
- Career and development counseling.
- Assessment and evaluation.
- Parental involvement.
- Work-based learning.

RESOURCES

Personnel

Local boards of education are responsible for securing the persons best qualified for their workforce development education programs. Selection must be subject to licensure standards approved by the State Board of Education.

Additional information related to licensure may be obtained by referring to the licensure guidelines available from the Division of

Staffing Responsibilities

Workforce development teachers should have the personal qualities, professional preparation, appropriate license, and work experience to carry out their teaching responsibilities effectively. The number and variety of course offerings determine the number of workforce development teachers needed in a school. Single teacher staffing can and will limit the number of courses offered. A sequence which extends from introductory study to specialized occupational areas usually requires multiple staffing.

The major duties of workforce development education teachers include:
- Preparing and implementing instructional plans.
- Working with business/industry representatives.
- Evaluating student progress.
- Implementing vocational student organization (VSO) leadership and instructional activities in and out of the classroom.
- Organizing and maintaining tools, equipment, and the facility.

An increasing number of teachers also have responsibility for using work-based learning activities such as the cooperative on-the-job training and supervision of school-based enterprises.

Sponsoring VSOs requires planning meetings, both at the local and regional levels, which may occur in the evening or on weekends. One lead advisor should be appointed to coordinate VSO activities and responsibilities for each program area.

Each of these major categories requires adequate time for preparation, often prior to school and after regular instructional time. Additional time should be provided if the teacher maintains laboratory equipment or coordinates work-based learning. Teachers should have adequate time for instructional preparation.

Professional Development

A school system should have a professional development program which assures that:
1. Activities are provided in accordance with identified professional, skill area, and individual growth and development needs of personnel.
2. An assessment has been conducted to identify staff development needs of workforce development education personnel.
3. The selection of in-service topics and activities is based on identified needs within the instructional program.
4. Teachers and other concerned personnel are informed regarding staff development opportunities available within and outside the local administrative unit, including colleges, universities, businesses and postsecondary institutions.
5. Teachers and other personnel are made aware of the components in the school system's staff development plan.
6. In-service activities offer practical methods to improve instruction and expedite job responsibilities.

7. Within reason, in-service activities are readily available and conveniently scheduled for participants.
8. Teacher and supportive staff are provided opportunities to participate in at least one annual staff development activity related to their teaching assignments and/or areas of licensure.

Facilities

Success of workforce development programs is dependent on adequate and well-equipped facilities which stay current with the business, industry, and other employment categories they represent. To assure successful learning, the physical facilities for each program should meet the following requirements:

1. Size and space for each program is adequate to accommodate the number of students enrolled.
2. Space is arranged for maximum flexibility and ease in teacher supervision of multiple activities.
3. Permanent furnishings and equipment are adequate in number and in good operating condition.
4. There is adequate provision for maintaining service systems in good working condition (e.g., electricity, water, light control).
5. Classrooms, laboratories, auxiliary areas (finish rooms, storage), and other facilities are adequate in design, suitability, and quantity to enable students to meet the specified objectives.
6. Each teacher is assigned a conveniently located, furnished, and equipped area for planning, record keeping, consultation, and administration.
7. All facilities meet the requirements of the Environmental Protection Agency and Occupational Safety and Health Act.
8. Restrooms and dressing rooms are located to provide convenient access to students of either sex.
9. Facilities have been modified to accommodate handicapped students.
10. Adequate provisions exist for the safety and health of students and teachers.

For further information about facilities, refer to the Workforce Development Education Facilities Planner.

Equipment, Materials, and Supplies

Students differ widely in interests, abilities, background, learning styles, and prerequisite knowledge and skills. The variations which exist in students make it equally important that a wide range of current and bias-free instructional materials be made available to students.

If students are to get the most out of occupational and practical life skills, they must have the opportunity to practice the tasks involved. This means that a quantity of consumable supplies must be available to students for practice and demonstration activities.

Rapid changes in technology require a regular updating of tools, equipment, and even raw materials. The school system must respond to modern technological advances by maintaining an on-going program for updating all tools, equipment, and materials used by students in laboratory activities. In general, the school system should plan to have the following available for each program:

1. Basic equipment and instructional aids in adequate quantity, quality, and currency to permit appropriate practice in laboratory instruction.
2. A budget that permits adding, replacing, and updating equipment and materials.
3. A budget that permits consumable supplies (such as food, lumber, ingredients for mortar, etc.) to be made available in sufficient quantities and at appropriate times.
4. Currently-adopted textbooks (or their equivalent) and pertinent supplementary books readily available in adequate supply and in usable condition.
5. A variety of bias-free instructional materials that can accommodate a great diversity of student interests.

Also, the school system should make sure that all tools and equipment are kept repaired and in good working order. Adequate instructional support and resource materials should be available at each teaching station or easily obtained from the media center or other central location.

For further information about specific equipment, refer to the Equipment Standards for Workforce Development Education.

Funding

Workforce development education programs are funded through a combination of state, federal, and local resources. The State Board of Education is committed to a funding formula which provides state funds for the support of a statewide secondary program. Federal vocational education funds allocated to local boards of education are to be spent according to federal criteria and purposes.

Local boards of education receive state/federal funds on the basis of a continuing plan and an annual application for workforce development education. This plan is to be developed with the advice of local advisory committees and is to be consistent with criteria set up by legislation and State Board of Education policy.

The vocational monies may be used to:

1. Employ instructional and supportive personnel.
2. Purchase instructional materials, supplies, and equipment.
3. Conduct certain other activities which contribute to the state and local goals/objectives of the workforce development program and which are consistent with criteria for their use.

The state/federal vocational funds made available are to be used to supplement the amount of local funds that would, in the absence of vocational funds, be made available for vocational education and in no case supplant funds.

All workforce development education courses identified in the course descriptions sections of this document are eligible for vocational funding when offered in an approved scope and sequence and according to the guidelines in the *Workforce Development Education Fiscal and Policy Guide.*

Curriculum Planning

It is critical to the success of a program's implementation/expansion that planning precede student enrollment. This planning time is to be used by administrative personnel to:

1. Conduct student interest, community, and employment surveys to determine if there is a need for the program.
2. Select an advisory committee composed of business, industry, and lay community representatives who jointly collaborate with educators in the decision-making process.
3. Select a licensed teacher who can begin contributing to the organizational operation of the program.
4. Design and organize classroom/laboratory facilities and obtain equipment, supplies, books, and materials.
5. Assure that local administrators and other school personnel understand and support the total program.
6. Interpret the program to students and the school community.

In addition, teachers may need time to develop on-the-job skills and the knowledge required for teaching the course.

Enrollment

Enrollment in each class is to be of a size that ensures effective instruction as prescribed in the individual course descriptions in Part II of the *Programs of Study.*

Recommended maximum student enrollment is established to maintain proper instructional management and to assure a safe and healthful teaching/learning environment. Maximum figures are suggested for each course of instruction based on the:

1. Degree to which student safety is involved in the learning process.
2. Desired level of learning outcomes for students in the course.
3. Type of instructional activities involved.
4. Type, quantity, and size of instructional equipment, materials, and supplies.
5. Amount of space needed by students and teachers for instructional purposes.

Factors influencing the number of students for any particular course should take into consideration availability of shops and laboratories, availability of qualified instructors, adequacy of preparation time, cooperative on-the-job placement, internship arrangements, number of classroom work stations, and class scheduling requirements.

Course blueprints, with competencies and objectives, and test-item banks serve as guides for planning and evaluating instruction. Available through VoCATS, these materials help teachers identify and assess student achievement.

Instructional Organization and Content

Course offerings within each program area are both competency-based and individualized. Teachers within a program should cooperatively develop a single, comprehensive instructional plan for each course and program in the school and in the school system. Teachers are also responsible for evaluating competencies established for the program. Where appropriate, discussions about gender equity should be incorporated into the curriculum.

WORK-BASED LEARNING

Work-based learning strategies allow schools to go beyond the classroom and into the community to develop student competence. An essential component of any work-based learning is connecting the workplace to school-based learning.

Apprenticeship

Apprenticeship is one of the oldest methods of job training. High school apprenticeship is an industry-driven education and career training program based on recognized industry standards. It is a means by which employers address current and projected employment needs. This

Continued on next page

program is a partnership among business, industry, education, government, parents and youth apprentices. Some apprenticeship characteristics are:

- Use of a skilled journeyman to help instruct the apprentice.
- Combination of classroom-related instruction with structured work-based learning.
- Employment by an employer who has a direct need for trainees in the occupation.
- Incremental pay scale that increases with skill and knowledge development.
- Training of a highly skilled technician or craft person.
- Appropriate for occupations that do not require a college degree but require a high level of skill and knowledge.
- Registration by the North Carolina Department of Labor, Apprenticeship and Training Division. The Division provides free assistance to the employer and to the apprentice and certifies both the training program and the newly trained journeyman.
- Application of high school apprenticeship hours and experience toward an adult apprenticeship leading to a completed journeyman certificate.
- About 500 to 1,000 hours of on-the-job training for each year of participation during high school. The high school student can begin when he/she turns 16 years of age and is part of the high school apprenticeship program.

Cooperative Education

Cooperative workforce development education provides on-the-job training for students through a cooperative agreement among the school, the employer, and the student. A cooperative education coordinator is responsible for providing classroom instruction related to the occupation in which the student is placed and for contact with the student and the appropriate supervisor at the training site. Written training agreements and written training plans between the school and the employers are cooperatively developed and available. Such agreements include:

- Provisions for the employment of student workers in conformity with federal, state, and local laws and regulations and in a manner not resulting in exploitation of such student workers for private gain.
- Related occupational instruction in school.
- Payment of the prevailing wage for employment to student workers and awarding school credit for on-the-job training.

In the classroom, students should receive instruction related to their on-the-job training experiences. A training plan jointly developed by the teacher coordinator and employer outlines the sequential classroom instruction and on-the-job training a student receives. The training plan is the base for evaluating the student's progress, on the job and in the classroom. Each cooperative student is coordinated and supervised by a teacher coordinator.

Students are to receive on-the-job training for a minimum of 450 hours during the school year and earn credit. This means that students work 15-20 hours per week at a training site.
Students may receive one unit of credit for each period spent in the classroom and another unit for the on-the-job training component.

Internship

Internships allow for additional development of workplace and technical competencies. Internships are an essential way for today's youth to experience the value of work, develop pride in work and mature personally. Many communities have opportunities for students to intern in an industry or to work with some community organization addressing a particular problem or need of the business/industry sector.

- *Internships* allow students to observe and participate in daily operations, develop direct contact with job personnel, ask questions about particular careers, and perform certain job tasks. This activity is exploratory and allows the student to get hands on experience in a number of related activities.
- *Career major internships* deviate from the traditional internship in that the workplace activity is directly related to classroom instruction and the career path of the student. A minimum of 160 hours should be completed.

Possibilities are limited only by the imagination of the students, the staff, and the employment community. The teacher, student, and the business community jointly plan the organization, implementation, and evaluation of an internship.

School-based Enterprises

A school-based enterprise engages students in providing services or the production of goods for sale through a school sponsored activity. Individual or sequenced high school courses are set up as actual student-run businesses. Participants learn entrepreneurship, application of skills and knowledge from other courses, and enhance their personal development.

Production work activities are also school-based and are performed by workforce development classes under contract with a second party for remuneration. These activities (e.g., live projects) have always been a vital part of the vocational education delivery system and are among the most effective instructional methods for developing student competence.

Job Shadowing

Job shadowing is an unpaid short term activity that exposes the student to the workplace. The student is allowed to observe an experienced skilled worker in an actual work setting. Job shadowing heightens student understanding of potential career opportunities and depicts a clear connection between the classroom and the workplace. The duration of this activity could be a half day or longer depending on the needs of the student and work place.

Service Learning

Service learning is a method by which students learn and develop through active participation in thoughtfully organized service and community service experiences. This method provides students with opportunities to use newly acquired skills and knowledge in real-life situations in their own communities.

Career Academies

Career academies are designed to integrate academic and workforce curricula organized around a theme (health careers, electronics, banking, etc.) They encompass a set of jobs ranging from those that require no postsecondary education to those that require advanced degrees. Academies have the following common characteristics:

- Each academy is organized as a "school within a school" where students take a sequence of courses together.
- Each academy has a particular vocational, occupational or industrial theme.
- Each academy enlists the active involvement of local employers in the related sector.

Local employers are involved in the development and implementation of the curriculum. Employers may also provide equipment, serve as mentors and offer summer work experiences.

Contracts and Agreements

Where conditions are not feasible to establish a regular in-school workforce development program, the following alternatives are available:

- Establish a contract or agreement with a private industry, business, training agency, or community/technical college.
- Employ temporary, part-time, hourly personnel for short-term instructional needs.

All contracts, agreements, and part-time or hourly personnel must meet the procedures outlined in the *Workforce Development Fiscal and Policy Guide.*

COURSE OFFERINGS

Local Course Options

Workforce development education courses may be offered in grades 6-12. These course offerings are shown by program areas on pages 17-19. Course descriptions are given in Part II.

A local education agency may request authorization for offering a course not listed on the course offerings chart by following the procedures outlined in Appendix B. This request must be prepared only once when courses are offered in a school system for the first time.

The following criteria should be used to help a local education agency determine whether to offer a specialized course.

1. The new course will satisfy a currently unfilled community need.
2. The new course is desired by local community and business leaders.
3. The career potential of this new course is permanent and not transitory or temporary in nature and is of sufficient size to assure employment opportunities to students.
4. The course offers attractive career and wage benefits to potential completers.
5. Qualified instructor is available.
6. Facilities, equipment, and appropriate instructional materials are available.
7. A curriculum framework is or can be developed which includes:
    - Competency and objective listing (blueprint) verified by business and industry.
    - Content outline.
    - Pre- and postassessment to show mastery and gain scores.

Examples of local program offerings are listed on page 20. Some curriculum materials for these courses are available from the Department of Public Instruction.

Workforce Development Education Course Offerings
Grades 6-12

Program Areas	Grades 6-8	High School Levels			
		Level 1	Level 2	Level 3	Level 4
Agricultural Education	Exploring Biotechnology (Grades 7-8)	Agriscience Applications	Agricutural Engineering Technology I	Agricultural Engineering Technology II	
			Horticulture I	Horticulture II	
			Animal Science I	Animal Science II	
			Environmental & Natural Resources Studies I	Environmental & Natural Resources Studies II	
			Agricultural Production & Management I	Agricultural Production & Management II	
				Agricultural Work Development I	Agricultural Work Development II
					Agricultural Education Advanced Studies
Business Education	Keyboarding Middle Grades (MG)	Principles of Business	Business and Electronic Communications	Business Law	Business Management & Applications
	Business Computer Technology (Grades 7-8)	Computer Applications I	Computer Applications II		
			Computerized Accounting I	Computerized Accounting II	
	Exploring Business and Marketing (Grades 7-8)	Keyboarding – High School (HS)		Network Administration I	Network Administration II
				Small Business/ Entrepreneurship	
				Business and Financial Management I	Business and Financial Management II
					Business Advanced Studies
Career Development	Exploring Career Decisions	Workplace Readiness			
Family and Consumer Sciences Education	Exploring Life Skills (Grades 7-8)	Teen Living		Life Management	
		Foods and Nutrition		Culinary Arts and Hospitality I	Culinary Arts and Hospitality II
				Food Science	
		Interior Design and Housing		Interior Design Services I	Interior Design Services II
		Parenting and Child Development		Early Childhood Education I	Early Childhood Education II
		Clothing Design		Community and Family Services I	Community and Family Services II
				Human Services Work Development I	Human Services Work Development II
					Family and Consumer Sciences Advanced Studies
Health Occupations Education		Biomedical Technology Health Team Relations	Allied Health Sciences I Medical Sciences I	Allied Health Sciences II Medical Sciences II	Health Sciences Advanced Studies

Continued

Workforce Development Education Course Offerings
Grades 6-12

Program Areas	Grades 6-8	High School Levels			
		Level 1	Level 2	Level 3	Level 4
Marketing Education		Principles of Business	Marketing Fashion Merchandising	Travel Tourism and Recreation Marketing Small Business/ Entrepreneurship Marketing Management Strategic Marketing Business and Financial Management I	Marketing Technology and Media Business and Financial Management II Marketing Advanced Studies
Technology Education	Exploring Technology Systems (Grades 7-8)	Fundamentals of Technology	Communication Systems Manufacturing Systems Structural Systems Transportation Systems Principles of Technology I	Principles of Technology II	Technology Studies

Continued

Workforce Development Education Course Offerings
Grades 6-12

Program Areas	High School Levels			
	Level 1	Level 2	Level 3	Level 4
Trade and Industrial Education	Introduction to Trade and Industrial Education		Trade & Industrial Work Development I	Trade & Industrial Work Development II
				Trade and Industrial Advanced Studies
		Communications Drafting I	Drafting - Architectural II	Drafting - Architectural III
			Drafting - Engineering II	Drafting - Engineering III
		Printing Graphics I	Printing Graphics II	Printing Graphics III
		Scientific and Technical Visualization I	Scientific and Technical Visualization II	
		Construction Construction Technology I	Construction Technology II	Construction Technology III
			Cabinetmaking II	Cabinetmaking III
		Electrical Trades I	Electrical Trades II	Electrical Trades III
		Masonry I	Masonry II	Masonry III
		Manufacturing Electro-Mechanical Technology I	Electro-Mechanical Technology II	Electro-Mechanical Technology III
		Electronics I	Electronics II	Electronics III
		Metals Manufacturing Technology I	Metals Manufacturing Technology II	Metals Manufacturing Technology III
		Textile Technology I	Textile Technology II	Textile Technology III
		Welding Technology I	Welding Technology II	Welding Technology III
		Public Service	Cosmetology I	Cosmetology II
		Transportation Automotive Service Technology I	Automotive Service Technology II	Automotive Service Technology III
			Collision Repair Technology II	Collision Repair Technology III

Local Course Options

Agricultural Education
- Aquaculture
- Agribusiness I and II
- Biotechnology & Agriscience Research I and II

Business Education
- Business Computer Programming
- Desktop Applications
- Notetaking/Speedwriting
- Office Technology and Procedures I and II
- Shorthand

Family and Consumer Sciences Education
- Apparel Design Services

Marketing Education
- Advertising and Sales Promotion
- Fashion Merchandising and Management
- International Marketing
- Sales Fundamentals

Trade and Industrial Education
- Aerospace
- Air Conditioning/Refrigeration
- Appliance Repair
- Blueprint Reading
- Computer Engineering Technology and Repair
- Commercial Art
- Diesel Mechanics
- Law Enforcement
- Marine Occupations
- Photography
- Plumbing
- Programming & Broadcasting
- Upholstery

MIDDLE GRADES
WORKFORCE DEVELOPMENT EDUCATION

PROGRAM DESCRIPTION

Career development is a lifelong process by which individuals develop and refine their self-identity as it relates to life and employment decisions. Middle grades students have reached a critical age where they can explore career decision making and develop future educational plans. Career development experiences for middle grades students are designed to be exploratory in nature and do not develop specific skills, except in Business Computer Technology and Keyboarding-Middle Grades (MG). However, in the other five middle grades courses, students will develop a knowledge of self and the world of work and begin a career development planning process for bringing the two together.

Design

Curriculum design, materials, and teaching strategies take into account the characteristics, nature, and learning styles of the middle grades student. Teaching strategies recommended for all course offerings include:

1. Hands-on approaches
2. Cooperative learning
3. Inquiry methods
4. Community involvement
5. Integration of academic skills

Commonalities among all course offerings include:

1. Critical and creative thinking
2. Communication skills
3. Problem solving
4. Leadership/citizenship
5. Career information and planning
6. Impact of technology

It is recommended that Exploring Career Decisions be the first experience in any given sequence. Local school systems should select courses that will provide a continuum of experiences for the middle grades learner. These courses will provide building blocks from which students may choose based on the results of their interest inventories and assessments. Development of an individual career development plan should be the outcome of the middle grades experience.

Opportunities for leadership development and further application of instructional competencies are provided through student participation in Career Exploration Clubs of North Carolina (CECNC) or a program area vocational student organization. Options include: FBLA, FFA, FHA/HERO, or TSA.

PROGRAM UNIQUENESS

Keyboarding and Business Computer Technology taught at the middle school level are designed to provide the same preparation and skill competence as Keyboarding taught at the high school level. Keyboarding-Middle Grades (MG) and Business Computer Technology should not be the sole provider of computer skill exposure at the middle grades. A combination of Keyboarding-Middle Grades (MG) and Business Computer Technology is designed to reinforce and compliment the computer skills being integrated throughout the elementary and middle school curriculum.

MAJOR PROGRAM OUTCOMES

The career development program at the middle grades level is designed to assist students in:

1. Making wise decisions about choices related to themselves and to the world of work.
2. Developing an individual career development plan.

NATIONAL CURRICULUM STANDARDS

In 1986, the National Occupational Information Coordinating Committee (NOICC) launched the National Career Development Guidelines initiative. These guidelines have been endorsed by the North Carolina State Board of Education and are being implemented in educational programs throughout the state. The guidelines reflect professional consensus in three main areas:

1. Competencies and indicators for individual growth in self-knowledge, educational and occupational exploration, and career planning.
2. Organizational capabilities to support competency-based career development programs.
3. Professional competencies that counselors and other staff must possess to deliver an effective career development program.

Education is a continuum that helps us take advantage of the opportunities in the workplace and to adapt to changing skill needs. Career development plays a key role in this continuum and the National Career Development Guidelines clearly recognize that need.

COURSE OFFERINGS

Middle Grades Course Offerings, Grades 6-8, are the following:

Grades 6-8	Grades 7-8
Exploring Career Decisions	Exploring Biotechnology
Keyboarding-Middle Grades (MG)	Exploring Business and Marketing
	Exploring Life Skills
	Business Computer Technology
	Exploring Technology Systems

Courses are shown at the first grade level at which they may be offered.

Course Descriptions for Middle Grades Workforce Development Education

Business Computer Technology

Course Number: 6400
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 67-90

This course is designed to provide hands-on instruction in basic computer hardware concepts and software applications. Emphasis is placed on extending and reinforcing touch keyboarding skills, while providing experience for learning word processing, database, spreadsheet, graphic, and telecommunication applications. Communication skills and basic mathematical concepts are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and job shadowing. Simulations, projects, teamwork and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite

Keyboarding-Middle Grades (MG)
Students enrolled in this course should have already aquired basic keyboarding, formatting, and proofreading skills.

Exploring Biotechnology

Course Number: 6828
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course provides instruction focused on the interrelationship of science and technology and the impact of this technology on agriculture, medicine and health care. Topics include biotechnology concepts, biomedical services, natural resources, environmental science, genetic engineering, agriscience, and global issues. Skills in mathematics, science, and language are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, field trips, shadowing, and supervised agricultural experience. Teaching strategies will encourage the development of essential skills and knowledge of the world of work and careers in biotechnology. This course contributes to the development of a career development plan.

Prerequisite

None

Exploring Business and Marketing

Course Number: 6208
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to explore the nature of business in an international economy and to study related careers in fields such as financial services, fashion merchandising, information systems, marketing, office systems technology, public relations and promotion, and travel and tourism. Emphasis is on using the computer while studying applications in these careers along with problem solving and thinking skills. Communication and mathematical skills are reinforced as students explore business applications and careers. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA

Continued on next page

leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies. This course contributes to the development of a career development plan.

Prerequisite None

Exploring Career Decisions

Course Number: 6158
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to provide an orientation to the world of work. Experiences are designed to introduce students to the technical nature of today's world and the role of productive workers. Activities enable students to increase self-awareness and make wise educational and occupational decisions as they plan for careers. Opportunities for leadership development and further application of instructional competencies are provided through Career Exploration Clubs of North Carolina (CECNC). The formal career development planning process often begins within this course.

Prerequisite None

Exploring Life Skills

Course Number: 7018
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course explores life management skills essential to the work of the family. Topics include resource management, nutrition and wellness, personal and social responsibility, fashion and appearance, and career development. The focus is on developing a foundation for the application of life management skills. Skills in applying basic academic skills, problem solving, decision making, and creative and critical thinking are reinforced in this course. This course also contributes to the development of the career development plan. Work-based learning strategies appropriate for this course are field trips, job shadowing, and service learning. Life skills development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and work-place readiness skills to authentic experiences.

Prerequisite None

Exploring Technology Systems

Course Number: 8108
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to allow students to explore basic technological concepts and related career fields. Topics include technology systems, technical drawing, graphic design, modeling skills, computer systems, electronics, and audio/visual production. Activities are structured to integrate physical and social sciences, mathematics, language, and fine arts. This course contributes to the development of a career development plan. Work-based learning strategies appropriate for this course include job shadowing and field trips. Exploring Technology Systems and TSA technical and leadership activities enhance the students' appreciation of technical and engineering career fields.

Prerequisite None

Keyboarding-Middle Grades (MG)

Course Number: 6511
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 67-90

This course is designed to teach basic keying skills, which consist of fluent manipulation of letter, figure/symbol, and basic service keys by "touch." Emphasis is on daily use of a computer system and appropriate software to provide integrated training through a learn/practice/sustain/assess plan of skill building. Communication skills are reinforced as students format, compose, and proofread. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite None

FOR MORE INFORMATION

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Raleigh, North Carolina 27601-2825

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AGRICULTURAL EDUCATION

PROGRAM DESCRIPTION

Agricultural Education provides students with the opportunity to participate in coordinated group and individual instructional activities that are focused on preparation for future careers in agriculture. The agricultural education program is designed to develop technical, leadership, and management expertise needed by middle and high school students preparing for careers in agricultural occupations and to further education in an agriculturally-related field.

Agriculture encompasses various elements of the food, fiber, and natural resource systems. Agricultural employment is broadly defined to include careers that require agricultural knowledge, skills, and attitudes needed in producing, managing, processing, marketing, distributing, regulating, or protecting any of the renewable resources. Formal instruction may also be provided for out-of-school youth and adults who wish to upgrade their agricultural skills and knowledge.

DESIGN

The agricultural education program is built on the three core areas of classroom/laboratory instruction, supervised agricultural experience programs, and FFA student organization activities/opportunities. The agricultural education program is designed for delivery through these three core educational strategies:

- Classroom/Laboratory Instruction - quality instruction in and about agriculture that utilizes a "learning by doing" philosophy.
- Supervised Agricultural Experience Programs (work-based learning experiences) - all students are expected to have an agriculturally-related work-based learning experience while enrolled in agricultural education courses.
- FFA Student Organization activities/opportunities - FFA activities are an integral part of the agricultural education program that all agricultural education students should participate in if they are to fully benefit from their agricultural education enrollment (opportunities for the development of life skills necessary for career success are provided through FFA membership and involvement).

A quality agricultural education program has a balanced utilization of these three core educational strategies.

The National Strategic Plan for Agricultural Education (1995) states that the mission of agricultural education is to prepare and support individuals for careers, build awareness, and develop leadership for the food, fiber, and natural resources systems. In 1996, a National Agricultural Biotechnology Standards sponsored by the United States Department of Education indicated *that employment in this burgeoning new field will be plentiful beyond the year 2000*. This national mission and employment outlook provide the framework upon which the North Carolina agricultural education program's curriculum is built.

MAJOR PROGRAM OUTCOMES

The major program outcomes for students enrolled in an agricultural education program are as follows:

1. Opportunity to explore career options available in agri-related fields and to assist them in planning for a future career.
2. Technical skills training for success in an agri-related career.
3. Connectivity of school-based instruction with work-based learning.
4. Leadership and personal development training needed to succeed in an agri-related career including teamwork, problem-solving, and communications.
5. Competitive advantage for students to succeed in an international economy.
6. Commitment to community development and service through projects that require interaction with parents, agribusiness leaders, civic organizations, etc.
7. Development of skills necessary for lifelong learning in agriculture leading to career advancement and success.

PROGRAM UNIQUENESS

The agricultural education program includes program offerings for students in grades 7-12. Students may choose to enter and progress through one of several agricultural education career pathways in order to achieve their career major within the program. The determination of offerings should be based on an assessment that includes a combination of student needs/interests, program enrollment, qualified teaching faculty, industry needs, and community interest/resources.

Exploring Biotechnology may be offered in grades 7-8 as a part of a middle grade workforce education program. Agriscience Applications is a recommended entry level course for students enrolled in grades 8 through 12, but is not a requirement for progressing to a higher level course. Level I and Level II courses are recommended for students enrolled in grades 9 through 12. Agricultural Work Development I and II are offered as options for those students completing a Level I course. Local agricultural education course options may be offered for students by the local school system after they have completed the Level I and Level II courses. Agricultural Advanced Studies is offered to agricultural education students in their senior year as a course option to demonstrate their ability to use content and apply knowledge to real-world situation in a career major.

COURSE OFFERINGS Agricultural Education course offerings, grades 7-12, are the following:

Grades 7-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Exploring Biotechnology	Agriscience Applications	Agricutural Engineering Technology I	Agricultural Engineering Technology II	
		Horticulture I	Horticulture II	
		Animal Science I	Animal Science II	
		Environmental & Natural Resources Studies I	Environmental & Natural Resources Studies II	
		Agricultural Production & Management I	Agricultural Production & Management II	
			Agricultural Work Development I	Agricultural Work Development II
				Agricultural Education Advanced Studies

Agricultural Education Course Descriptions

Agriscience Applications
Course Number: 6810
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides instruction that focuses on integrating biological/physical sciences with technology as related to the environment, natural resources, food production, and science and agribusiness. Topics of instruction include agricultural awareness and literacy, leadership and FFA, employability skills, introduction to all aspects of the total agricultural industry. Skills in biology, language, writing, computers, math, and physics are reinforced in this course. Work-based learning strategies appropriate for this course are: field trips, shadowing, agriscience projects, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite None

Agricultural Advanced Studies
Course Number: 6899
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This is a three-phased exit course for seniors that is career-focused in agricultural education. The three components of the program include a research paper, a product, and a presentation. Students demonstrate their ability to use content and apply knowledge to real-world situations in a career major. In addition, they will also demonstrate their ability to write, speak, apply knowledge, problem-solve, and use life skills such as time management, planning, follow-through, and organization. Students work under the guidance of a teacher facilitator in collaboration with community members, business representatives and other school-based personnel.

Prerequisite Three technical credits in a career major.

Agricultural Engineering Technology I
Course Number: 6831
Recommended Maximum Enrollment: 20
Recommended Hour of Instruction: 135-180

This course provides instruction to develop knowledge and technical skills in the broad field of agricultural machinery, equipment, and structures. The primary purpose of this course is to prepare students to handle the day-to-day problems, accidents, and repairs needs they will encounter in their chosen agricultural career. Topics include agricultural mechanics safety, agricultural engineering career opportunities, hand/power tool use and selection, electrical wiring, basic metal working, basic agricultural construction skills related to plumbing, concrete and carpentry, basic welding, and leadership development. Skills in physics, geometry, and algebra are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, field trips, shadowing, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite None

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Agricultural Engineering Technology II

Course Number: 6832
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers instruction that expands upon the knowledge and skills learned in Agricultural Engineering Technology I. This course prepares students for an agricultural career in the agricultural engineering field. The topics of instruction emphasized are non-metallic agricultural fabrication techniques, metal fabrication technology, safe tool and equipment use, human resource development, hot/cold metal working skills and technology, advanced welding and metal cutting skills, working with plastics, and advanced career exploration/decision-making. Skills in physics, geometry, and algebra are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, internships cooperative education, apprenticeship, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite Agricultural Engineering Technology I

Agricultural Production and Management I

Course Number: 6811
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides instruction that focuses on the basic scientific principles and processes related to the production of plants and animals for the food and fiber system. Topics of instruction include basic understanding of the livestock/poultry industry and its various components, career opportunities, soil science, crop science/agronomy, weed science, basic agricultural machinery and related industry careers, environmental stewardship, and leadership/personal development. Skills in algebra and biology are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, internships, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite None

Agricultural Production and Management II

Course Number: 6812
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides instruction that expands the scientific knowledge and technical skills developed in Agricultural Production and Management I with heavy emphasis on topics including pesticide use and safety, herbicide use and safety, wildlife habitat concerns, irrigation, agricultural equipment technology and safety, global industry issues, career planning, and human resource development. Skills in algebra and biology are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, supervised agricultural experience, and apprenticeship. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite Agricultural Production and Management I

Agricultural Work Development I

Course Number: 6861
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180
Plus paid work experience

This course provides instruction through a combination of classroom, laboratory and supervised on-the-job training in agri-related careers. Topics include occupational orientation, technical training related to the career area in which students are focused, and employability skills as outlined in the SCANS report. Skills reinforced in this course include technical mathematics, language, and writing. This entire course focuses on work-based learning experiences. FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Completion of Level I in any cluster.

Agricultural Work Development II

Course Number: 6862
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180
Plus paid work experience

This course covers instruction that expands the knowledge and skills developed in Agricultural Work Training I with a heavy emphasis on topics related to strengthening public relations, communications, resume writing, interviewing, and other soft skills to better prepare students for the world of work. Skills reinforced in this course include technical mathematics, language, and writing. This entire course focuses on work-based learning experiences. FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Agricultural Work Development I

Animal Science I

Course Number: 6821
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides instruction focused on the basic scientific principles and processes that are involved in animal physiology, breeding, nutrition, and care in preparation for an animal science career major. Topics include animal diseases, introduction to animal science, animal nutrition, animal science issues, career opportunities, and animal evaluation. Skills in biology, chemistry, and algebra are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, internships, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: None

Animal Science II

This course covers instruction that expands upon the scientific knowledge and skills developed in Animal Science I to include more advanced scientific, computation, and communication skills are developed in animal science. Topics include animal waste management, animal science economics, decision making, global concerns in

Continued on next page

Course Number: 6822
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

the industry, genetics, and breeding. Content knowledge in biology, chemistry, and algebra are reinforced in this class. Work-based learning strategies appropriate for this course are agriscience projects, internship, cooperative education, apprenticeship and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Animal Science I

Environmental and Natural Resources Studies I

Course Number: 6851
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides an introduction to environmental studies, which include topics of instruction in renewable and non-renewable resources, history of the environment, personal development, water and air quality, waste management, land use regulations, soils, meteorology, fisheries, forestry, and wildlife habitat. Skills in biology and algebra are reinforced in this class. Work-based learning strategies appropriate for this course are agriscience projects, field trips, shadowing, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: None

Environmental and Natural Resources Studies II

Course Number: 6852
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers instruction that expands the knowledge and skills developed in Environmental Studies and Natural Resource Management I with heavy emphasis on instruction in best management practices and skills in methods of environmental monitoring and conservation, air and water regulations, sampling methodologies, prescribing conservation techniques, wildlife, and forestry management. Skills in biology, chemistry, and algebra are reinforced in this class. Work-based learning strategies appropriate for this course are agriscience projects, field trips, shadowing, cooperative education, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Environmental and Natural Resource Studies I

Exploring Biotechnology

Course Number: 6828
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course provides instruction focused on the interrelationship of science and technology and the impact of this technology on agriculture, medicine and health care. Topics include biotechnology concepts, biomedical services, natural resources, environmental science, genetic engineering, agriscience, and global issues. Skills in mathematics, science and language are reinforced in this course. This course contributes to the development of a career development plan. Work-based learning strategies appropriate for this course are projects, field trips, and shadowing. Teaching strategies will encourage the development of essential skills and knowledge of the world of work and careers in biotechnology.

Prerequisite: None

Horticulture I

Course Number: 6841
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides instruction on the broad field of horticulture with emphasis on the scientific and technical knowledge for a career in horticulture. Topics in this course include plant growth and development, plant nutrition, media selection, basic plant identification, pest management, chemical disposal, customer relations, career opportunities, and leadership development. Skills in biology, chemistry, and algebra are reinforced in this course. Work-based learning strategies appropriate for this course are agriscience projects, internships, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: None

Horticulture II

Course Number: 6842
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers instruction that expands the scientific knowledge and skills developed in Horticulture I to include more advanced scientific, computation, and communication skills needed in the horticulture industry. Topics include greenhouse plant production and management, bedding plant production, watering systems, light effects, basic landscape design, installation and maintenance, lawn and turfgrass management, career planning, and leadership/personal development. Skills in biology, chemistry, and algebra are reinforced in this class. Work-based learning strategies appropriate for this course are agriscience projects, cooperative education, apprenticeship, and supervised agricultural experience. Supervised agricultural experience programs and FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Horticulture I

LOCAL COURSE OPTIONS

Schools may offer one or more specialized courses not included in the Programs of Study. These courses should meet a local economic need. Options may include:

- Aquaculture
- Agribusiness I & II
- Biotechnology & Agriscience Research I & II

Refer to Part I, Local Course Options, and Appendix B for instructions on how to offer these courses.

FOR MORE INFORMATION

Agricultural Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Education
301 North Wilmington Street
Raleigh, NC 27601-2825

or

Agricultural Education
North Carolina State University
Department of Agricultural and Extension Education
Ricks Hall, #6
Raleigh, NC 27695-7607
(919) 515-1681

BUSINESS EDUCATION

PROGRAM DESCRIPTION

Business Education is a broad, comprehensive curriculum at the middle and high school levels that provides students with meaningful instruction for and about business. Instruction in Business Education encompasses business skills and techniques, an understanding of basic economics, and business attitudes essential to participate in the international marketplace as productive workers and consumers.

The public schools of North Carolina have a responsibility to provide a competent, business-literate, and skilled workforce. Business Education is critical to this process! Business Education is for every student because it is designed to integrate business and computer technology skills into the high school curriculum. Therefore, a Business Education course should be part of the curriculum for each student. Business Education has relevance and helps young adults to manage their own financial affairs and make intelligent consumer and business-related choices.

Design

Business Education is designed to prepare graduates as viable competitors in the business world and for advanced educational opportunities. The instructional program begins in the middle grades with exploratory experiences leading to career decisions and the development of proficiency in operating a computer keyboard using the touch system and using basic computer software applications. It continues at the high school level with career majors that provide knowledge/skill development in:

- Accounting and Finance
- Business Administration
- Business Management and Small Business/Entrepreneurship
- Information Systems
- Office Systems Technology

The basic skills of reading, writing, and computation are an integral part of the business program. Computer literacy and proficiency in the various applications are emphasized. Development of human relations/ interpersonal, employability, economic, and entrepreneurial skills is a part of each of the career majors. Opportunities to develop and apply leadership, social, civic, and business-related skills are provided through Future Business Leaders of America (FBLA), the vocational student organization for business students. Integration of the entire business program with appropriate academic concepts/courses is strongly encouraged.

MAJOR PROGRAM OUTCOMES

Business Education prepares students for successful transition from school to work as it empowers them to use business principles and concepts as they manage their current and future responsibilities as informed consumers and productive workers. The Business Education program equips students to demonstrate they have the following traits:

- Technology users who utilize technological tools and resources to complete tasks, solve problems, and make decisions.
- Quality producers who create intellectual, artistic, practical, and physical products that reflect high quality standards. Product results conform with business/industry standards of being complete, correct (within quality standard limits), and on time.
- Self-directed learners who create a positive vision for themselves and their future, set priorities and achievable goals, create options for themselves, monitor and evaluate their progress, and assume responsibility for themselves.
- Collaborative contributors who use effective leadership and group skills to develop and manage interpersonal relationships within economically, culturally, and organizationally diverse settings in a international environment.
- Effective communicators who read, listen, analyze, interpret, and respond in order to convey significant messages to others and to receive, interpret, and utilize the messages of others.
- Empowered individuals with background information for further study in the field of business, employment, and advancement in a business career.
- Confident and competent workers as a result of work-based learning and FBLA activities, which allow skill application and leadership development in business settings.

NATIONAL VOLUNTARY SKILL STANDARDS

The Center for Occupational and Research Development (CORD) convened a committee of incumbent administrative support workers from ten states to do a modified DACUM. They reviewed the competency statements, tasks, standards, and job titles for administrative support workers. Based on an Occupational Inventory of Skills for Administrative Support Occupations, V-TECS and Professional Secretaries International (PSI) administered surveys to more than 1,000 PSI members in 40 states. Core and specific tasks were identified to assist in matching knowledges, abilities, and interests to create a clear set of performance expectations based on current administrative support practices. *The Skill Standards for Administrative Support Occupations* document, completed in 1996, was used in developing blueprints for this *Programs of Study*.

NATIONAL CURRICULUM STANDARDS

The National Standards for Business Education were developed by business people and members of the National Business Education Association during 1995. These voluntary national curriculum standards have created a rational structure for the Business Education curriculum. The 12 essential areas such as computation, economics and personal finance, international business, and management have been incorporated into the Business Education career majors and course blueprints. Students completing career majors in business will be prepared broadly with principles and concepts as business has directed.

STUDENT CREDENTIALING AND CERTIFICATION

Most businesses focus on skills acquired through course work and work-based learning experiences in deciding if prospective employees can perform in their workplace. Building a portfolio as students progress through the Business Education courses is one way to show the skills they can use effectively.

Students desiring a universally recognized credential for the workplace that is computer related should enroll in a career major that leads them to the Certified Network Administrator credential. This high school credential can be enhanced at postsecondary levels or may be used immediately in the workplace.

The Office Proficiency Assessment and Certification (OPAC) is available for students seeking certification in administrative support positions. Certified Professional Secretary (CPS) certification is available for students who desire to have one of the most prestigious credentials for administrative support personnel. These certification programs are supported by Professional Secretaries International.

PROGRAM UNIQUENESS

Keyboarding is essential to success in all business occupations. Keyboarding is any input activity involving the manipulation of the letter and figure keys, space bar, return key, tab, and shift keys by the use of a touch system. This skill is essential if students are to interact with a computer in the most effective manner.

Touch keyboarding is an essential skill for students to be proficient in today's computerized workplaces. Each course in a business career major requires the use of the computer. For students to succeed in these courses, they must have keying skills and basic computer skills that allow them to perform at acceptable levels.

Local education agencies are encouraged to have students demonstrate competence in basic keyboarding and business computer usage. Through an assessment that focuses on speed, accuracy, formatting, and proper techniques, trained business educators can determine the level of competence in keyboarding and basic computer usage. By administering selected timed writings and formatting assessments to all students in the middle/junior high, the students can be counseled into proper courses in the high school.

Keyboarding-Middle Grades (MG) and Business Computer Technology, taught at the middle grades level, are designed to provide the same preparation and skill competence as Keyboarding-High School (HS) taught at the high school level. Keyboarding MG and Business Computer Technology should not be the sole provider of computer skill exposure at the middle grades. A combination of Keyboarding MG and Business Computer Technology is designed to reinforce and complement the computer skills being integrated throughout the elementary and middle grades curriculum. Keyboarding HS is designed for students not obtaining keyboarding instruction at the middle grades level or not meeting the minimum skill level necessary for high school level Business Education courses.

The Business Education career majors are designed broadly with foundational skills at levels 1 and 2. As the students progress into levels 3 and 4, they begin to specialize into a career cluster. These career majors are designed to allow the students to articulate into the postsecondary programs to gain the appropriate degree of specialized training they desire.

COURSE OFFERINGS

Business Education course offerings, grades 6-12, are the following:

Grades 6-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Keyboarding-Middle Grades (MG)	Principles of Business	Business and Electronic Communications	Business Law	Business Management & Applications
Business Computer Technology	Computer Applications I	Computer Applications II		
Exploring Business and Marketing		Computerized Accounting I	Computerized Accounting II	
	Keyboarding High School (HS)		Network Administration I	Network Administration II
			Small Business/ Entrepreneurship	
			Business and Financial Management I	Business and Financial Management II
				Business Advanced Studies

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Business Education Course Descriptions

Business Computer Technology

Course Number: 6400
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 67-90

This course is designed to provide hands-on instruction in basic computer hardware components and software applications. Emphasis is placed on extending and reinforcing touch keyboarding skills, while providing experience for learning word processing, database, spreadsheet, graphic, and telecommunication applications. Communication skills and basic mathematical concepts are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite

Keyboarding MG
Students enrolled in this course should have already acquired basic keyboarding, formatting, and proofreading skills.

Business and Electronic Communications

Course Number: 6535
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course provides students essential competencies for oral and written communications in the technological workplace. Emphasis is placed on utilizing the computer to develop written communication skills such as composing memos, letters, and reports; describing processes or mechanisms; and completing forms and responding to e-mail. Utilizing technology (presentation software and telecommunications) to develop oral communication skills such as delivering oral presentations, giving instructions, interviewing for information, and presenting information/reports in an effective manner are reinforced in this course. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite

Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Business Advanced Studies

Course Number: 6599
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This is a culminating course for seniors that is career focused in Accounting and Finance, Business Administration, Business Management and Ownership, Information Systems, and Office Systems Technology in the business technologies pathway. The three parts of the course include writing a research paper, producing a product, and delivering a presentation. Students demonstrate their abilities to use content and apply knowledge to professional business situations in a selected career. In addition, they will also demonstrate their ability to

Continued on next page

write, speak, apply knowledge, problem solve, and use life skills such as time management and organization. Students work under the guidance of a teacher-advisor in collaboration with community members, business representatives, and other school-based personnel.

Prerequisites — Three Business or Marketing credits in a Business Technologies career major.

Business Law

Course Number: 6215
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to acquaint students with the basic legal principles common to business and personal activities. Topics include personal concepts to assist students when evaluating contracts, maximizing purchasing power through credit, purchasing appropriate insurance, and renting and owning real estate. Business concepts such as contracting, ethics, starting a business, hiring employees, managing employees, or representing other businesses as employee or contractor are included. Skills in critical thinking are reinforced in this course along with oral and written communication skills. Work-based learning strategies appropriate for this course are field trips and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite — Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Business and Financial Management I

Course Number: 6331
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed as a study of financial and management concepts in a business environment. Topics of study include financial institutions/services, financial planning, consumer rights and responsibilities, credit, investing, and management. Mathematical, economics, and communication skills are reinforced as the students gain a better understanding of individual responsibilities to self, to society, and to personnel with whom they will work. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisites — Computerized Accounting I and Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Business and Financial Management II

Course Number: 6332
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed as an advanced study of financial and management concepts in a business environment. Topics of study include stocks, bonds, annuities, mutual funds, pensions, employment benefits, labor laws, tax laws, business forecasting, and management. Mathematical, economics, and communication skills are reinforced as the students gain a better understanding of business responsibilities to stockholders and personnel with whom they will work. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: Business and Financial Management I

Business Management and Applications

Course Number: 6225
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers the organizational functions of businesses including total quality concepts, project management, and problem solving. Emphasis is placed on analyzing the social, technological, and organizational systems in businesses, such as human relations, communications, records management, and meeting and conference coordination. Skills in communications and mathematics are reinforced as the student uses the appropriate business technology to perform business applications. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisites: Computer Applications I and either Business and Electronic Communications or Computerized Accounting I

Computerized Accounting I

Course Number: 6311
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to help students understand the basic principles of the accounting cycle. Emphasis is placed on analysis and the recording business transactions, preparation and interpretation of financial statements, accounting systems, banking and payroll activities, basic types of business ownership, and an accounting career orientation. Mathematical skills and critical thinking are reinforced. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter and unbound report; and exhibit proper keyboarding techniques.

Computerized Accounting II

Course Number: 6312
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to provide students with an opportunity to develop in-depth knowledge of accounting procedures and techniques utilized in solving business problems and making financial decisions. Emphasis includes partnership accounting; adjustments and inventory control systems; budgetary control systems; cost accounting; and further enhancement of employment skills. Mathematics skills and critical thinking are reinforced. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite Computerized Accounting I

Computer Applications I

Course Number: 6411
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to help students master beginning and advanced skills in the areas of word processing, database management, and spreadsheet, telecommunications, and desktop tool applications. Emphasis is on concepts of desktop publishing and presentation graphics as well as skill development in computer application software; computer architecture; operating systems, environments and utilities; ethical issues pertaining to information systems; and computer information system careers. Communication skills and critical thinking are reinforced through the software applications. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Computer Applications II

Course Number: 6412
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to help students master beginning and advanced skills in the areas of desktop publishing, presentation graphics, and integrated software applications while building mastery of telecommunications and on-line services. Emphasis is placed on skill development and refinement of skills in computer application software, common applications of computer information systems in organizations, computer systems planning and acquisition, systems analysis and design, information systems security, and the social and economic impact of computer information systems in an international marketplace. Communication skills and critical thinking are reinforced through the software applications. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: Computer Applications I

Exploring Business and Marketing

Course Number: 6208
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to explore the nature of business in an international economy and to study related careers in fields such as financial services, fashion merchandising, information systems, marketing, office systems technology, public relations and promotion, and travel and tourism. Emphasis is on using the computer while studying applications in these careers along with problem solving and thinking skills. Communication and mathematics skill are reinforced as students explore business applications and careers. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies. This course contributes to the development of a career development plan.

Recommended prerequisite: Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter and unbound report; and exhibit proper keyboarding techniques.

Keyboarding Middle Grades (MG)

Course Number: 6511
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 67-90

This course is designed to teach basic keying skills, which consist of fluent manipulation of letter, figure/symbol, and basic service keys by "touch." Emphasis is on daily use of a computer system and appropriate software to provide integrated training through a learn/practice/sustain/assess plan of skill building. Communication skills are reinforced as students format, compose, and proofread. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: None

Keyboarding High School (HS)

Course Number: 6512
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to teach basic keying skills, which consist of fluent manipulation of letter, figure/symbol, and basic service keys by "touch." Emphasis is on the daily use of a computer system to develop skills with concentrated application of these skills to the production of business correspondence. Communication skills are reinforced as the students format, compose, and proofread. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite None

Network Administration I

Course Number: 6341
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course is the first of two courses based on industry-validated skill standards that provide network administration curriculum to train students in the day-to-day administration of an installed network. Topics include introduction to networking, accessing network information and resources, file and directory management, and hardware configurations. Critical thinking skills are taught and reinforced in this course to prepare students for advanced network instruction. Work-based learning strategies appropriate to this course are internships, cooperative education and youth apprenticeship. Simulations, projects, teamwork and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite Computer Applications I

Network Administration II

Course Number: 6342
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course is the second of two courses of a certification program based on industry-validated skill standards. Topics in this course include networking fundamentals, security, administrator responsibilities, and documentation of work-based experiences. Critical thinking skills are taught and reinforced in this course to allow students to pass the exam to attain official certification. Work-based learning strategies appropriate to this course are internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite Network Administration I

Principles of Business

Course Number: 6200
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This is an introductory course covering principles and concepts that will be the foundation for future study of business and the management of work projects. Topics of study include basic business principles, management concepts, systems thinking and total quality, and the current environment for business in an international marketplace. Communication skills and basic mathematic concepts are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and job shadowing. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Small Business/ Entrepreneurship

Course Number: 6235
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction 135-180

This course introduces students to the rewards and risks of owning or operating a business enterprise. Emphasis is placed on the mastery of skills needed to plan, organize, manage, and finance a small business. Skills in communication, technical writing, math, research, and problem-solving are reinforced as each student prepares his/her own business plan. Work-based learning strategies appropriate for this course include cooperative education and paid/unpaid internships. Simulations, projects, teamwork, and FBLA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite None

LOCAL COURSE OPTIONS

Schools may offer one or more specialized courses not included in the *Programs of Study*. These courses should meet a local economic need. Options may include:

- Business Computer Programming
- Desktop Applications
- Office Technology and Procedures I and II
- Notetaking/Speedwriting
- Shorthand

Refer to Part I, Local Course Options, and Appendix B for instructions on how to offer these courses.

FOR MORE INFORMATION

Business Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, North Carolina 27601-2825

CAREER DEVELOPMENT

PROGRAM DESCRIPTION

Career development is comprised of those programs, services, and activities which result in the development and implementation of an appropriate Career Development Plan (CDP) for each workforce development enrollee. Organizationally, career development has two components: instructional courses and career development services.

Instructional Courses

Instructional courses are Exploring Career Decisions (6-8) and Workplace Readiness (9-12). Each is designed with stand-alone units which may be taught separately or in combination with one or more related units. Combination of all available units will produce comprehensive, full-length courses.

Opportunities for leadership development and application of instructional competencies for students enrolled in Exploring Career Decisions are provided through Career Exploration Clubs of North Carolina (CECNC), which should be an integral part of the instructional program.

MAJOR PROGRAM OUTCOMES

The major outcomes of the instructional component are:

1. The student will make wise decisions related to themselves and the world of work.
2. The student will develop and implement an individual career development plan (CDP).

Exploring Career Decisions is composed of three instructional units:

- Self-Awareness
- Career Exploration
- Career Planning

Units reflect commonalities with other middle grades workforce development education courses, including:

- Career information and planning
- Communication skills
- Critical and creative thinking
- Impact of technology
- Leadership/citizenship
- Problem solving

Four instructional units in Workplace Readiness are:

- Employment preparation
- Problem solving
- Self-management
- Teamwork

To implement a comprehensive, full year course, exploratory units may be sequenced. Workplace Readiness may be followed by an appropriate work-based experience such as internship or apprenticeship.

Career Development Services

Career development coordinators or industry-education coordinators . provide and coordinate career guidance and counseling activities, publicize workforce development programs, and promote business-education partnerships. The functions of these coordinators are grouped into the following five basic areas:

1. Preparatory services coordination
2. Case management coordination
3. Transitional services coordination
4. Promotional activities and public information coordination
5. Business-education partnerships coordination

MAJOR PROGRAM OUTCOMES

The major thrusts of career development coordination include the following:

1. Students are provided materials, occupational information, career guidance and counseling activities, and labor market information needed to enable them to make effective educational and career plans.
2. Each student enrolled in workforce development has a career development plan, including academic and workforce development courses, appropriate for a designated career objective, and postsecondary plans.
3. Support services are coordinated to meet the needs of students in successfully completing programs leading to high school graduation.
4. Students are involved in experiences designed to enable them to make smooth transitions from one level of workforce development to the next, and from school-to-work or further education.
5. Workforce development completers are to meet performance standards which relate to post-graduate job and/or educational placement.
6. The advantages and career opportunities of workforce development are promoted among students, parents and all segments of the community to facilitate the appropriate placement of workforce development program completers.
7. Through collaborative efforts with the business and industry community, business-education partnerships are created to assist students in developing the skills needed in today's workforce.

ELIGIBLE STUDENTS

Career development coordination contains career development services provided through preparatory and transitional services for students who:

1. Are enrolled in a workforce development education course.
2. Are registered to take a workforce development course.
3. Have indicated a career choice compatible with a workforce development education program.

School-wide and group activities provided by the coordinator may benefit other students. However, the focus must be on providing services for those students who fit in one of the three categories listed above.

Completers of a workforce development program may be served for a period of one year after graduation. Based on completer follow-up data, those completers who indicate they are unemployed and seeking full-time employment will be provided additional services. The recommended ratio of students per coordinator is one coordinator for 750 students, based on the school-wide enrollment.

SERVICE DELIVERY STRATEGIES

The activities and strategies for career development coordination in each LEA/school should be detailed in the Yearly Program Blueprint. Each career development coordinator, regardless of months of employment or source of funding, should coordinate a minimum of one activity from each of the five basic areas. The following list provides examples of appropriate activities for each of the five areas of service.

Preparatory Services Coordination

- Outreach and recruitment activities
- Career planning activities such as group guidance, interest, and aptitude assessments
- Development and dissemination of informational materials about opportunities in workforce development
- Preparation of students' education plans.

Case Management Coordination

- Career information center management
- Individual career counseling
- Vocational honor societies
- Collection and dissemination of labor market and student follow-up data
- Preparing and revising students' career development plans.

Transitional Services Coordination

- High school program placement
- Job placement
- Post-high school educational placement

- Collection and dissemination of information relating to career and educational opportunities
- Coordination of employability skills training
- Shadowing, internship, mentoring, and apprenticeship placements
- Visits to business, industry, military, and educational sites
- Job opportunities conventions; and career days.

Promotional Activities and Public Information Coordination

- Multi-media programs, displays and exhibits for workforce development functions, news media coverage, and printed materials such as brochures and tabloids.

Business/Education Partnerships Coordination

- Resource persons, support and assistance for workforce development projects and scholarships, and advisory councils coordination.

COURSE OFFERINGS

Career Development Course offerings, grades 6-12 are the following:

Grades 6-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Exploring Career Decisions	Workplace Readiness			

Career Development Course Descriptions

Exploring Career Decisions
Course Number: 6158
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to provide an orientation to the world of work. Experiences are designed to introduce students to the technical nature of today's world and the role of productive workers. Activities enable students to increase self-awareness and make wise educational and occupational decisions as they plan for careers. Opportunities for leadership development and further application of instructional competencies are provided through Career Exploration Clubs of North Carolina (CECNC). The formal career development planning process often begins within this course.

Prerequisite: None

Workplace Readiness
Course Number: 6145
Maximum Enrollment: 26
Recommended Hours of Instruction: 67-90

This course is designed to develop the fundamental attitudes and behaviors needed to secure employment and advance in a career. Skills are generic to all occupations and emphasize proficiency in the workplace, problem-solving, teamwork, and self-management. In addition, skills are developed which are specific to investigating, securing, and maintaining appropriate employment.

Prerequisite: None

FOR MORE INFORMATION

Career Development Consultant
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, North Carolina 27601-2825

FAMILY AND CONSUMER SCIENCES EDUCATION

PROGRAM DESCRIPTION

Family and Consumer Sciences Education prepares students for careers working with individuals and families, as well as for competence in the work of their own families. The concept of work, whether in a family or career, is central to the program area. The program's unique focus is on families, work, and their interrelationships. Family and Consumer Sciences Education prepares individuals for family and career.

Family and Consumer Sciences Education is founded on six distinct core areas. The areas are:

- Consumer Education and Resource Management
- Family and Interpersonal Relationships
- Foods, Nutrition, and Wellness
- Interiors, Housing, and Design
- Human Development and Parenting Education
- Textiles, Apparel, and Fashion

Developmentally appropriate courses incorporate these six core areas, as well as academic integration and workplace applications, to prepare students to successfully manage individual, family, work, and community roles. Examples of workplace applications include basic skills, thinking skills, and personal qualities. Ultimately, students prepare to enter paid employment and to advance within a career with additional training and/or education.

Course Types

Family and Consumer Sciences Education consists of three types of courses.

- Foundation courses
- Specialized courses
- Career courses

Foundation Courses

In foundation courses, students develop the core knowledge they need to manage their lives. Foundation Courses are Exploring Life Skills, Teen Living, and Life Management.

Specialized Courses

In specialized courses, students further develop their technical knowledge and skills related to the work of the family and within their chosen career area. Specialized courses are Clothing Design, Foods and Nutrition, Interior Design and Housing, and Parenting and Child Development.

Career Courses

In career courses, students complete their high school career program by developing technical and employability skills. Work-based learning strategies are essential to complete a career area. Career courses are Community and Family Services I and II, Culinary Arts and Hospitality I and II, Early Childhood Education I and II, Family and Consumer Sciences Advanced Studies, Food Science, Human Services Work Development I and II, and Interior Design Services I and II. Career courses in the apparel design career area may be offered as a local program option.

Family and Consumer Sciences Education has six career majors.

- Apparel design
- Community and family services
- Culinary arts and hospitality
- Early childhood education
- Food science, dietetics, and nutrition
- Interior design

Each major is designed to offer students meaningful school-based and work-based learning as preparation for a range of entry-level positions, technical occupations, and professional careers.

FHA/HERO serves as the student organization for Family and Consumer Sciences Education. It is a co-curricular organization that is a vehicle for mastering Family and Consumer Sciences competencies through leadership, citizenship, and skill development. Members develop life skills through character development, creative and critical thinking, interpersonal communication, practical knowledge, and career preparation.

MAJOR PROGRAM OUTCOMES

Family and Consumer Sciences Education prepares students for successful life management, employment, and career development. The overall program empowers students to:

1. Balance personal, home, family, and work lives.

2. Strengthen the well-being of individuals and families across the life span.

3. Become responsible citizens and leaders in family, community, and work settings.

4. Promote optimal nutrition and wellness across the life span.

5. Manage resources to meet the material needs of individuals and families.

6. Use critical and creative thinking skills to address problems in diverse family, community, and work environments.

7. Prepare for successful life management, employment, and career development.

8. Function as providers and consumers of goods and services.

9. Appreciate human worth and accept responsibility for one's actions and success in family and work life.

NATIONAL VOLUNTARY OCCUPATIONAL SKILL STANDARDS

The United States Departments of Education and Labor have initiated public-private partnerships to develop voluntary skill standards for various industries. They identified skills and performance levels needed by the American workforce to be competitive.

Family and Consumer Sciences Education links with the skill standards projects described below:

Apparel Design
- The Uniform and Textile Service Association (UTSA) sets skill standards for production workers and maintenance technicians in the industrial laundry. These skills apply to the apparel design career area.

Community and Family Services
- The Human Services Research Institute (HSRI) sets skill standards for the human services position of community support worker. These skills apply to Community and Family Services I & II.

Culinary Arts and Hospitality
- The Council of Hotel, Restaurant, and Institutional Education (CHRIE) sets skill standards for the food service positions of host, server, busser, and cashier/counter person in the hospitality and tourism industry. These skill standards apply to Culinary Arts and Hospitality I & II.

- The National Grocers Association (NGA) sets skill standards for customer service/stock associate and front-end associate. These skill standards apply to Culinary Arts and Hospitality I & II.

Interior Design Services
- The Foundation for Industrial Modernization (FIM) sets skill standards for computer aided drafting and design. These skill standards apply to Interior Design Services I & II.

STUDENT CREDENTIALING AND CERTIFICATION

Students who complete both levels of Early Childhood Education may be recognized as "teachers" in accordance with G.S. 110-9118; 143 B-168.3. The Child Day Care Rules of North Carolina define "teacher" as the care giver who has responsibility for planning and implementing the daily program of activities for each group of children in a day care facility. These completers are entitled to the same benefits and are bound by the same requirements as other teachers in child care centers.

Food Handling Certification is offered by county health departments and independent consultants. To receive the credential, students must satisfactorily complete the "Serve Safe Food Service Manager Certification" course developed and promoted by the National Restaurant Association. This is in addition to regular course work in Culinary Arts and Hospitality I and II.

PROGRAM UNIQUENESS

Two areas in Family and Consumer Sciences Education have industry regulations. In both courses of study, compliance is recommended to meet public standards, therefore mitigating liability.

Culinary Arts and Hospitality

- The NC Department of Labor cites regulations on the use of equipment; and the NC Department of Environment, Health, and Natural Resources cites regulations regarding sanitation. These regulations assure the protection of public health. On an annual basis, food service establishments are inspected by county officials with the resulting sanitation grade posted. The establishments are issued grades of A, B, and C based on their compliance level.

Early Childhood Education

- The NC Department of Human Resources, Division of Child Development, Regulatory Services, cites regulations related to child care and safety. Child care licensure is obtained by submitting an application for a license, passing inspections, and providing written operational plans and records. Licenses are renewed annually. An "A" license is required for operation. A center may also obtain a national accreditation from the National Association for the Education of Young Children.

Further, in all on-the-job work opportunities, students are bound by the same regulations as other employees, such as those regarding health certificates or immunizations. The Fair Labor Standards Act including Child Labor Law Requirements and the NC Wage and Hour Act also apply.

COURSE OFFERINGS

Family and Consumer Sciences Education course offerings, grades 7-12, are the following:

Grades 7-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Exploring Life Skills	Teen Living		Life Management	
	Foods and Nutrition		Culinary Arts and Hospitality I	Culinary Arts and Hospitality II
			Food Science	
	Interior Design and Housing		Interior Design Services I	Interior Design Services II
	Parenting and Child Development		Early Childhood Education I	Early Childhood Education II
	Clothing Design		Community and Family Services I	Community and Family Services II
			Human Services Work Development I	Human Services Work Development II
				Family and Consumer Sciences Adv. Studies

Family and Consumer Sciences Education
Course Descriptions

Clothing Design Course Number: 7035 Maximum Enrollment: 16 Recommended Hours of Instruction: 135-180	This course includes basic skills in apparel selection, fashion design, and garment construction. Emphasis is on applying design and construction principles to select, design, and construct apparel and home fashions. Skills in mathematics, communication, and science are reinforced in this course. Work-based learning strategies appropriate for this course are field trips, job shadowing, and service learning. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.
Prerequisite	None
Community and Family Services I Course Number: 7161 Maximum Enrollment: 20 Recommended Hours of Instruction: 270-360	This course introduces students to human services careers providing access, information, and resources to individuals, families, and communities. Emphasis is placed on identifying needs, managing resources, and establishing relationships with clients. Skills in communication and resource management are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are service learning, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Teen Living is a recommended prerequisite for this course.
Prerequisite	None
Community and Family Services II Course Number: 7162 Maximum Enrollment: 20 Recommended Hours of Instruction: 270-360	This course prepares students for leadership in community support careers that provide for diverse human service roles. Topics include social systems, information management, and problem solving. Skills in communication, management, and entrepreneurship are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are service learning, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Life Management is a recommended prerequisite for this course.
Prerequisite	Community and Family Services I

Culinary Arts and Hospitality I

Course Number: 7121
Maximum
Enrollment: 16
Recommended Hours of
Instruction: 270-360

This course introduces students to basic food production, management, and service activities in both the back and the front of the "house." Emphasis is placed on sanitation, safety, and basic food preparation. Skills in mathematics, science, and communication are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Foods and Nutrition is a recommeded prerequisite for this course.

Prerequisite None

Culinary Arts and Hospitality II

Course Number: 7122
Maximum
Enrollment: 16
Recommended Hours of
Instruction: 270-360

This course provides advanced experiences in food production, management, and service. Topics include menu planning, business management, and guest relations. Skills in mathematics, communication, creative thinking, and entrepreneurship are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite Culinary Arts and Hospitality I

Early Childhood Education I

Course Number: 7111
Maximum
Enrollment: 16
Recommended Hours of
Instruction: 270-360

This course prepares students for careers working with young children birth through age 8. Emphasis is placed on enhancing the development of young children while providing care or teaching. Topics include health, safety, guidance, and developmentally appropriate activities. Skills in communication and interpersonal relationships are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Parenting and Child Development is a recommended prerequisite for this course.

Prerequisite None

Early Childhood Education II

Course Number: 7112
Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course prepares students for management careers and business ownership related to working with young children. Topics include curriculum development, record keeping, and personnel management. Skills in communication, management, and interpersonal relationships are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: Early Childhood Education I

Exploring Life Skills

Course Number: 7018
Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course explores life management skills essential to the work of the family. Topics include resource management, nutrition and wellness, personal and social responsibility, fashion and appearance, and career development. The focus is on developing a foundation for the application of life management skills. Skills in applying basic academic skills, problem solving, decision making, and creative and critical thinking are reinforced in this course. This course also contributes to the development of the career development plan. Work-based learning strategies appropriate for this course are field trips, job shadowing, and service learning. Life skills development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: None

Family and Consumer Sciences Advanced Studies

Course Number: 7199
Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This is a culminating course for seniors that is career-focused in the apparel design; community and family services: culinary arts and hospitality: early childhood education: food science, dietetics, and nutrition; or interior design career area. The three parts of the course include a research paper, a product, and a presentation. Students demonstrate their abilities to use content and apply knowledge to authentic situations in a selected career. In addition, they will also demonstrate their abilities to write, speak, solve problems, and use life skills such as time management and organization. Students work under the guidance of a teacher-facilitator in collaboration with community members, business representatives, and other school-based personnel. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: Three technical credits in apparel design, community and family services, culinary arts and hospitality, early childhood education, or interior design career area; or three technical and/or related non-required science credits in the food science, dietetics, and nutrition career area.

Foods and Nutrition

Course Number: 7045
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180

This course examines nutritional needs of the individual. Emphasis is placed on the relationship of diet to health and on the selection of food to satisfy needs. Skills in science and mathematics are reinforced in this course. Work-based learning strategies appropriate for this course are field trips, job shadowing, and service learning. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite None

Food Science

Course Numbers: 7075
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180

This course develops laboratory skills in the scientific evaluation of food, product development, and food preservation. Topics include the investigation of matter, electrolyte solutions, energy, properties, mixtures, and systems as they relate to food. Skills in science and mathematics are reinforced in this course. Work-based learning strategies appropriate for this course are field trips, job shadowing, and internships. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Foods and Nutrition is a recommended prerequisite for this course.

Prerequisite None

Human Services Work Development I

Course Number: 7141
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180
plus paid work
experience

This course combines classroom instruction with skilled on-the-job training in a student's chosen Family and Consumer Sciences career area. Students spend 50 percent of their course work in school-based learning and 50 percent in work-based learning. In the classroom, students follow the course blueprint for their career area: Community and Family Services I, Culinary Arts and Hospitality I, Early Childhood Education I, Food Science, or Interior Design Services I. While on the job, students focus on skills that cannot be attained in the classroom. Communication, teamwork, and employability skills are reinforced for all students in this course. Work-based learning strategies appropriate for course are internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. See the related career course description for the recommended prerequisite.

Prerequisite None

Human Services Work Development II

Course Number: 7142
Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180 plus paid work experience

This course continues the career preparation for providing services to individuals, families, and communities begun in Human Services Work Development I. It combines classroom instruction with skilled on-the-job training in a student's chosen Family and Consumer Sciences career area. Students spend 50 percent of their course work in school-based learning and 50 percent in work-based learning. In the classroom, students follow the course blueprint for their career area: Community and Family Services II, Culinary Arts and Hospitality II, Early Childhood Education II, Food Science, or Interior Design Services II. While on the job, students focus on skills that cannot be attained in the classroom. Entrepreneurship, leadership, and career planning skills are reinforced for all students in this course. Work-based learning strategies appropriate for this course are internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: Human Services Work Development I or as applicable - Community and Family Services I, Culinary Arts and Hospitality I, Early Childhood Education I, Food Science, or Interior Design Services I

Interior Design and Housing

Course Number: 7055
Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course examines housing and interiors decisions that individuals and families make based on their needs, the environment, and technology. Emphasis is placed on selecting goods and services and creating functional and pleasing living environments based on sound financial decisions and design principles. Skills in mathematics, technology, and art are reinforced in this course. Work-based learning strategies appropriate for this course are field trips, job shadowing, service learning, and school-based enterprises. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: None

Interior Design Services I

Course Number: 7151
Maximum Enrollment: 20
Recommended Hours of Instruction: 270-360

This course prepares students for opportunities in the residential and non-residential interior design fields for entry-level and technical jobs. Topics include application of design theory to interior plans and production, selection of materials, and examination of business procedures. Skills in technology, art, mathematics, and communication are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are field trips, job shadowing, school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences. Interior Design and Housing is a recommended prerequisite for this course.

Prerequisite: None

Interior Design Services II

Course Number: 7152
Maximum Enrollment: 20
Recommended Hours of Instruction: 270-360

This course prepares students for opportunities in the residential and non-residential interior design fields professional jobs and entrepreneurial endeavors. Topics include advanced application of design theory to interior plans and production, selection of materials, customer relations, and entrepreneurship in a simulated business environment. Skills in technology, art, mathematics, and communication skills are reinforced in this course. Comprising 50 percent of the course work, work-based learning strategies appropriate for this course are field trips, job shadowing, school-based enterprises, internships, cooperative education, and apprenticeship. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite
Interior Design Services I

Life Management

Course Number: 7085
Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed to empower students to take action for the well-being of themselves and others in the family, workplace, and community. Topics include resource management, personal development, parenting, relationships, career development, and wellness and nutrition. The focus is on what students need to know and be able to do to manage work and family responsibilities within the first five years after high school. Skills in decision making, problem solving, critical thinking, interpersonal relationships, technology, workplace readiness, and communication are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and service learning. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite
None

Parenting and Child Development

Course Number: 7065
Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course introduces students to responsible nurturing and basic applications of child development theory. Emphasis is on the parents' responsibilities for and the influences on children while providing care and guidance. Skills in communication, resource management, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and service learning. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite
None

Teen Living

Course Number: 7015
Maximum
Enrollment: 26
Recommended Hours of
Instruction: 135-180

This course examines life management skills in nutrition and wellness, family living, child development, and consumer management. Emphasis is placed on students applying these skills during their teen years. Through simulated experiences, they learn to fulfill their responsibilities associated with the work of the family and community. Skills in mathematics, communication, science, technology, and personal and interpersonal relationships are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and service learning. Skill development and FHA/HERO leadership activities provide the opportunity to apply instructional competencies and workplace readiness skills to authentic experiences.

Prerequisite: None

LOCAL COURSE OPTIONS

Schools may offer one or more specialized courses not included in the *Programs of Study*. These courses should meet a local economic need. Options may include:

Apparel Design Services

Refer to Part I, Local Course Options, and Appendix B for instructions on how to offer these courses.

FOR MORE INFORMATION

Family and Consumer Sciences Education
Workforce Development Education
Division of Instructional Services
NC Department of Public Instruction
301 North Wilmington Street
Raleigh, NC 27601-2825

HEALTH OCCUPATIONS EDUCATION

PROGRAM DESCRIPTION

The comprehensive Health Occupations Education program seeks to meet present and predicted needs for health care workers within a health care delivery system that is characterized by diversity and changing technologies. It is a program that recruits qualified and motivated students and prepares them for pursuit of appropriate health careers.

Design

Based on natural and social sciences, the humanities, and a researched body of knowledge, the curriculum is designed to offer a foundation of knowledge and skills necessary to health career preparation. Curriculum concepts incorporate technological advances related to the health care delivery system, including ethics, professionalism, prevention (wellness), patient/client diagnosis, treatment, care, and rehabilitation as a result of disease/disorders. Teaching/learning strategies integrate appropriate workplace basic skills that assist students to use resources and technologies, function as effective members within a complex system, and to access and use appropriate information/data.

Guiding students to make relevant connections between abstract theories and concrete applications is emphasized throughout the curriculum. This is especially practiced through team teaching with health professionals and on-site practicums (preceptorships/internships).

Opportunities for expanded leadership, management, technical, and citizenship development are available through membership in a co-curricular student organization, Health Occupations Students of America (HOSA). The organization includes local, regional, state, and national levels. Activities integrate curriculum competencies and objectives. Healthy competition through organized and judged skill events assists in strengthening those skills that make students more marketable as potential health care workers. Interaction with health professionals also guides members in the selection of health careers. HOSA seeks to instill an attitude of pride, commitment, and professionalism in its members, and strives to build self-esteem and confidence.

MAJOR PROGRAM OUTCOMES

Health Occupations Education programs are designed to enable students to:

1. Select health career majors suited to their individual needs, aptitudes, abilities, and career development plan.

Continued on next page

2. Develop a sound preprofessional and pretechnical multiskilled foundation based on National Health Care Skill Standards.

3. Successfully pursue advanced education and/or entry-level employment in a health career major.

4. Develop workplace basic skills as applied to adapting to technological change, transferring of skills to different environments, and functioning as ethical and moral health team members.

5. Acquire and use information relevant to remaining technologically abreast of their choosen health career majors and the health field in general.

6. Develop a professional philosophy as evidenced in personal qualities and practices, that improves the delivery of quality health care and health maintenance to consumers.

7. Become knowledgeable consumers of health care in a consistently changing technological environment.

NATIONAL SKILL STANDARDS

Through a United States Department of Education federal grant managed by Far West Laboratory on Research and Development and in partnership with the National Consortium on Health Science and Technology Education (NCHSTE), voluntary National Health Care Skill Standards have been validated. There are 31 core standards configured into six subsets that address what health care workers need to know and be able to do. Research conducted by North Carolina State University (1995-1996) has provided significant evidence that the secondary Health Occupations Education body of knowledge has integrated each of the standards. VoCATS provides a valid and reliable student assessment.

STUDENT CREDENTIALING AND CERTIFICATION

Cardiopulmonary Resuscitation (CPR) and Basic First Aid Certification

- Students who successfully complete Allied Health Sciences I and II may acquire American Red Cross or American Heart Association CPR and Basic First Aid Certification.

Standard Precautions Proficiency Certification

- The Occupational Safety and Health Act (OSHA) requires all health care workers who may come in contact with body fluids must demonstrate proficiency in tasks/procedures referred to as "Standard Precautions." Students must demonstrate such

Continued on next page

proficiency prior to their Health Occupations Education clinical internships or mentorships. Evaluation and certification may be given by either local health agency personnel or by a licensed secondary Health Occupations Education teacher.

Nurse Aide, Level I Certification

- A student may acquire Nurse Aide Level I certification if the student:

1. Successfully completes selected core competencies in Allied Health Sciences I and II and supplemental competencies identified in the state approved Nurse Aide, Level I curriculum.

2. Is taught by a state approved teacher (Registered Nurse) in a state approved program.

3. Scores at least 85 percent on a written examination and 100 percent on a performance assessment within a health care agency.

Students' names and demographic data are entered into the North Carolina Nurse Aide Central Nurse Registry that is electronically accessible statewide to potential employers.

DAMON Medical Terminology Certification

- Students who successfully complete the DAMON Medical Terminology course may receive certification awarded by the local Health Occupations Education program and an approved teacher. The DAMON system is recognized by health agencies and by postsecondary Health Occupations Education programs.

PROGRAM UNIQUENESS

Work-based experiences include an individualized approach with either a minimum of 90 hours in a clinical internship in health agencies, or a minimum of a 45-hour mentorship with a health care professional. Medical liability insurance for negligent acts in health agencies and Hepatitis Type B virus vaccinations are afforded to students prior to clinical experiences. Health agencies may require testing for tuberculosis and a criminal record check for felonies related to drugs.

COURSE OFFERINGS

Health Occupations Education course offerings, grades 9-12, are the following:

Levels			
Level 1	Level 2	Level 3	Level 4
Biomedical Technology Health Team Relations	Allied Health Sciences I Medical Sciences I	Allied Health Sciences II Medical Sciences II	Health Sciences Adv. Studies

NOTE: The sequencing of Health Occupations Education courses should result in having seniors only in Allied Health Sciences II and Medical Sciences II. This is a criterion for acquiring medical liability insurance.

Health Occupations Education Course Descriptions

Allied Health Sciences I

Course Number: 7211
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course investigates the health care delivery system, its services, occupations, and related sciences. Topics include the study of the language of medicine, medical mathematics, microbiology, anatomy and physiology, diseases/disorders, diagnoses, treatments, patient/client care regimens, career development, and future technological innovations. Work-based learning strategies include service learning, field trips, and job shadowing. Skills in science, mathematics, communications, social studies and health are reinforced in this course. Projects, teamwork, demonstrations, and HOSA competitive events serve as instructional strategies that reinforce the curriculum content.

Prerequisites: Biology and Health Education

Allied Health Sciences II

Course Number: 7212
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course is designed to prepare potential health care workers, preferably seniors, to become effective and efficient multiskilled health team members. Emphasis is placed on the development of proficiency in employability skills, emergency care skills, safety skills, clerical skills, and health care skills. The work-based learning strategy appropriate for this course is a minimum 90-hour clinical internship where student interns deliver health care in local hospitals, medical/dental/veterinarian offices, nursing/convalescent/retirement facilities, wellness centers, etc. Skills in science, mathematics, communications, health, and social studies are reinforced in this course. HOSA activities support networking with health care agencies and professionals through the development of clinical expertise and volunteerism.

Prerequisites: Allied Health Sciences I or Medical Sciences I

Biomedical Technology

Course Number: 7200
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This survey course challenges students to investigate current and 21st century medical and health care practices using computerized databases, the Internet, media, and visiting health team professionals. Topics include the world of biomedical technology, the language of medicine, present and evolving biomedical specialties, biomedical ethics: crises and alternatives, and health career development. Work-based learning strategies include service learning, field trips, and job shadowing. Skills in science, mathematics, communications, health, and social studies are reinforced in this course. HOSA membership provides opportunities for personal and experiential growth.

Prerequisite: None

Health Science Advanced Studies

Course Number: 7299
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This is a culminating course for seniors that is career-focused in a health or medical career. The three parts of the course include a research paper, a product, and a presentation. Students demonstrate their abilities to use content and apply knowledge to real-world situations in a selected career. In addition, they will also demonstrate their abilities to write, speak, apply knowledge, problem solve, and use life skills such as time management and organization. Students work under the guidance of a teacher-facilitator in collaboration with community members, business representatives, and other school-based personnel.

Prerequisites: Three credits in Health Occupations Education

Health Team Relations

Course Number: 7210
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed to assist potential health care workers in their role and function as health team members. Topics include terminology, the history of health care, health care agencies, ethics, legal responsibilities, careers, holistic health, human needs, change, cultural awareness, communication, medical math, leadership, and career decision-making. Work-based learning strategies include service learning, field trips, and job shadowing. Basic academic skills, employability skills, critical thinking skills, teamwork, and the use of technology are reinforced in this course. HOSA leadership activities provide many opportunities for practical application of instructional competencies.

Prerequisite: None

Medical Sciences I

Course Number: 7221
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course uses advanced investigative approaches to the study of human and social sciences as related to medicine and health care. Emphasis includes patient/client psychology, bioethical/legal practices, the language of medicine, body chemistry, microbiology, anatomy and physiology, and the current and futuristic study of diseases and disorders. Work-based learning strategies include service learning, field trips, and job shadowing. Skills in science, mathematics, communications, health, and social studies are reinforced in this course. HOSA competitive events serve as instructional strategies that reinforce the curriculum content.

Prerequisites: Biology, Algebra I, Health Education

Medical Sciences II

This specialized course is designed to prepare potential health care workers, preferably seniors, for performance in an advanced technical or professional health career. Emphasis is placed on research, communications, safety, computer literacy, health team relations,

Continued on next page

Course Number: 7222
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

problem-solving and decision-making. Skills in mathematics, science, communications are reinforced in this course. Work-based learning strategies include the development of individualized clinical skills specifically related to a selected mentorship (minimum of 45 hours) with an exemplary health professional. HOSA activities support networking with health care agencies and professionals through the development of clinical expertise and volunteerism.

Prerequisites: Allied Health Sciences I or Medical Sciences I

FOR MORE INFORMATION

Health Occupations Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, North Carolina 27601-2825

MARKETING EDUCATION

PROGRAM DESCRIPTION

The purpose of the Marketing Education instructional program is to prepare students for advancement in marketing and management careers and/or future studies in two-year technical/community colleges or four-year colleges or universities. Marketing is a vast and diverse discipline. It encompasses activities within production, as well as aspects of consumption. It is as specific as procedures for inventory control and, at the same time, as general as the creativity needed in effective promotion. The function of marketing occurs in all industries. Application of skills in reading, writing, mathematics, problem-solving, and critical thinking are found throughout the curriculum.

Based upon the National Curriculum Framework and National Skill Standards, courses in Marketing Education provide students with essential skills necessary to succeed in the workplace. The basic skills of reading, writing, and mathematics are an integral part of the Marketing Education curriculum. Skills in academic and technical areas are combined with the use of technology to provide students the foundation our business and industry leaders demand. Emphasis is placed on the development of competence in marketing functions and foundations, economic foundations and human resource foundations, to create a well-rounded education, therefore enabling students to pursue further education in their chosen marketing career.

DESIGN

The high school scope and sequence of Marketing Education includes varied program offerings for students in grades 9-12 (levels 1-4). Students may enter the program and progress through the Business Technologies Career Pathway in one of six career majors:

- Marketing Technologies
- Sales & Technical Services
- Travel, Tourism, and Recreation Marketing
- Business Management and Small Business/Entrepreneurship
- Fashion Merchandising
- Business Administration

Work-based learning strategies should be practiced throughout the Marketing Education curriculum.

Opportunities to develop and apply leadership, social, civic, and vocational/technical skills in marketing are provided through DECA, an association for Marketing Education students. As an integral part of the instructional program, students engage in performance activities to demonstrate their mastery of knowledge to business and industry leaders. These organized activities help to interpret the Marketing Education program to the business community, faculty, parents, and other students.

MAJOR PROGRAM OUTCOMES

Marketing programs in the secondary schools are designed to enable students to:

1. Make realistic career choices regarding marketing careers.
2. Prepare for further education in the discipline of marketing.
3. Develop occupational and entrepreneurial skills necessary for initial employment and advancement in a marketing career.
4. Develop an understanding and appreciation of the social, civic, and economic values of the production, marketing, and consumption of goods and services.
5. Participate in work-based learning activities which allow skill application in a marketing related field.
6. Develop initiative and leadership skills.
7. Develop and apply communication, computational, problem-solving, critical thinking, and planning competencies that will enable them to pursue further education and/or advance more rapidly in a chosen marketing career.

NATIONAL VOLUNTARY SKILL STANDARDS

National Skill Standards for the Hospitality and Tourism Industry

Through the Council of Hotel, Restaurant, and Institutional Education (CHRIE), in conjunction with the National Skill Standards Project, voluntary skill standards for the hospitality and tourism industry have been developed. Food, lodging, travel-related, and recreational services are addressed in these standards. These standards are addressed in the Travel, Tourism, and Recreation Marketing curriculum.

National Retail Skill Standards

The National Retail Federation (NRF) developed skill standards for the retail sales associate to promote a high performance work organization at the point where the greatest number of jobs and the opportunity for driving profit co-exist. These standards are addressed in the Marketing, Marketing Management, and the Fashion Merchandising curricula through personal selling competencies.

National Voluntary Curriculum Standards

The North Carolina Marketing Curriculum is based on the National Marketing Education Curriculum Framework. This framework was

Continued on next page

developed through a joint effort of the U. S. Department of Education, the Marketing Resource Center, business and industry leaders, and marketing educators across the nation.

The Curriculum Framework is divided into three foundational areas and nine marketing functions. The three foundations support the nine marketing functions.

The three broad instructional areas include:

- Economic Foundations of Marketing
- Human Resource Foundations
- Marketing and Business Foundations

The nine specific functions recognized in the curriculum framework include competencies ranging from the career-sustaining level to manager-entrepreneur. The nine functional areas of marketing are:

- Distribution
- Financing
- Marketing-Information Management
- Pricing
- Product/Service Planning
- Promotion
- Purchasing
- Risk Management
- Selling

COURSE OFFERINGS

Marketing Education course offerings, grades 7-12, are as follows:

Grades 7-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Exploring Business & Marketing Education	Principles of Business	Marketing Fashion Merchandising	Travel, Tourism, and Recreation Marketing Small Business/ Entrepreneurship Marketing Management Strategic Marketing Business and Financial Management I	Marketing Technology and Media Business and Financial Management II Marketing Advanced Studies

Course Descriptions for Marketing Education

Business and Financial Management I

Course Number: 6641
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed as a study of financial and management concepts in a business environment. Topics of study include financial institutions/services, financial planning, consumer rights and responsibilities, credit, investing, and management. Mathematics, economics, and communication skills are reinforced as the students gain a better understanding of individual responsibilities to self, to society, and to personnel with whom they will work. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: See page 42 for prerequisites.

Business and Financial Management II

Course Number: 6642
Recommended Maximum Enrollment: 26
Recommended Hours of Instruction: 135-180

This course is designed as an advanced study of management concepts for personnel and finances in business. Topics of study include stocks, bonds, annuities, mutual funds, pensions, employment benefits, labor laws, tax laws, business forecasting, and management. Mathematical, economics and communication skills are reinforced as the students gain a better understanding of business responsibilities to stockholders and personnel with whom they work. Work-based learning strategies appropriate to this course are school-based enterprises, internships, cooperative education, and apprenticeship. Simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite: Business and Financial Management I

Exploring Business and Marketing

Course Number: 6208
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to explore the nature of business in an international economy and to study related careers in fields such as financial services, fashion merchandising, information systems, marketing, office systems technology, public relations and promotion, and travel and tourism. Emphasis is on using the computer while studying applications in these careers along with problem solving and thinking skills. Communication and mathematical skills are reinforced as students explore business applications and careers. Work-based learning strategies appropriate for this course are service learning, field trips, and job shadowing. Simulations, projects, teamwork, and CECNC leadership activities, meetings, conferences, and competitions provide

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opportunities for application of instructional competencies. This course contributes to the development of a career development plan.

Recommended Prerequisite

Keyboarding Skill – defined as minimum of 35 words per minute with errors corrected; format from rough draft copy of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Fashion Merchandising

Course Number: 6631
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed for students interested in the fashion industry and the merchandising of fashion. Topics include an overview of the fashion industry, evolution and movement of fashion, career development, merchandising, risk management, promotion, and fashion show production. Skills in research, mathematics, textile chemistry, and technical writing are reinforced in this course. Work-based learning strategies appropriate for this course include cooperative education or paid/unpaid internships. Marketing simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Prerequisite

None

Marketing

Course Number: 6621
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed to help students develop basic knowledge, skills, and attitudes that will prepare them to enter the field of marketing. Focusing on the National Curriculum Framework and National Retail Standards, an emphasis is placed on marketing and business foundations, economic foundations, and human resource foundations. Included in these foundations are concepts such as communications, selling, pricing, promotion, marketing-information management, and product/service planning. Skills in communications, mathematics, and psychology are reinforced in this course. Work-based learning strategies appropriate for this course include job shadowing, field trips, and/or cooperative education. Marketing simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Prerequisite

None

Marketing Technology and Media

This course is designed to couple the marketing and economic skills students have mastered with the latest technology in marketing sales, mass media, research, and customer service presentation techniques. Emphasis is placed on creating a professional, polished approach to marketing products and services. Skills in technical writing,

Continued on next page

communications, mathematics, and application of current computer software are reinforced in this course. Work-based learning strategies appropriate for this course include paid/unpaid internships and apprenticeships. Marketing simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Course Number: 6665
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

Prerequisite: Marketing, Fashion Merchandising or Strategic Marketing, and Computer Applications I.

Marketing Management

Course Number: 6622
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed to continue the foundations covered in Marketing or Fashion Merchandising. Topics of study include recruiting, hiring, training and evaluating employees; information management; purchasing; pricing; ethics; sales management; and financing. Skills in math, human relations, communications, and technical writing are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education, paid/ unpaid internships, and apprenticeships. Marketing simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Prerequisites: Marketing or Fashion Merchandising

Marketing Advanced Studies

Course Number: 6699
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course is a three-phased culminating exit course for seniors that is career-focused. The three components of the program include writing a research paper, producing a product, and delivering a presentation. Students demonstrate their ability to use content and apply knowledge to real-world situations in a career major. In addition, they will also demonstrate their ability to write, speak, apply knowledge, problem solve, and use life skills such as time management, planning, follow through, and organization. Students work under the guidance of a teacher facilitator in collaboration with community members, business representatives, and other school-based personnel. Simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisites: Three Marketing or Business credits in a Business Technologies career major.

Principles of Business

This course is an introductory course covering principles and concepts that will be the foundation for future study of business and management of work projects. Topics of study include basic business principles, management concepts, systems thinking and total quality, and the

Continued on next page

Course Number: 6600
Recommended
Maximum
Enrollment: 26
Recommended Hours of
Instruction 135-180

current environment for business in an international marketplace. Communication skills and basic mathematic concepts are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and job shadowing. Simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

Prerequisite

Keyboarding Skill – defined as a minimum of 35 words per minute with errors corrected; format from rough draft of an announcement, memorandum, personal business letter, and unbound report; and exhibit proper keyboarding techniques.

Small Business/ Entrepreneurship

Course Number: 6615
Recommended
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180

This course is designed to introduce students to the rewards and risks of owning or operating a business enterprise. Emphasis is placed on the mastery of skills needed to plan, organize, manage, and finance a small business. Skills in communication, technical writing, mathematics, research, and problem-solving are reinforced as each student prepares his/her own business plan. Work-based learning strategies appropriate for this course include cooperative education and paid/unpaid internships. Simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide opportunities for application of instructional competencies.

None

Strategic Marketing

Course Number: 6626
Recommended
Maximum
Enrollment: 20
Recommended Hours
of Instruction: 135-180

This fast-paced course challenges students by combining in one year the content taught in both the Marketing and Marketing Management course. The curriculum, activities and resources utilized in this course are written at the freshman college level. Topics include economics, marketing research and decision making, domestic and international markets and influences, human resource development, ethics, management, and financial analysis. Skills in mathematics, research and critical thinking are reinforced in this course. Work-based learning strategies appropriate for this course include cooperative education and paid/unpaid internships. Marketing simulations, projects, teamwork, and DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Prerequisite

None

Travel, Tourism, and Recreation Marketing

This course is designed to provide a foundation for students interested in a career in travel, tourism, and recreation marketing. Emphasis is placed on the hospitality/tourism industry, customer relations, travel destinations, tourism promotion, economics, and career development.

Course Number: 6645
Recommended
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180

Skills in mathematics, psychology, geography, and communications are reinforced in this course. Work-based learning strategies appropriate for this course include cooperative education or paid/unpaid internships. Marketing simulations, projects, teamwork, DECA leadership activities, meetings, conferences, and competitions provide many opportunities for application of instructional competencies.

Prerequisite: Marketing

LOCAL COURSE OPTIONS

Schools may offer one or more specialized courses not included in the *Programs of Study.* These courses should meet a local economic need. Options may include:

Advertising and Sales Promotion
Fashion Merchandising and Management
International Marketing
Sales Fundamentals

Refer to Part I, Local Course Options, and Appendix B for instructions on how to offer these courses.

FOR MORE INFORMATION

Marketing Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, North Carolina 27601-2825

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TECHNOLOGY EDUCATION

PROGRAM DESCRIPTION

Technology Education is designed to help students develop an appreciation and understanding of technology through the study and application of materials, tools, and processes of the past and present. This series of courses allows students to apply knowledge, tools, skills, and insights to the solving of problems found in communication, manufacturing, structural, and transportation systems. Students learn about and from technology, by applying abstract ideas and concepts of mathematics, science, language arts, and social studies. Through this integrated study of technology, students develop an understanding of the importance and role of technology in our society.

Design

Communication skills and problem solving are major focuses of the prerequisite course, Fundamentals of Technology. Emphasis is placed on skills and tools central to technology studies and the systems courses, including interpreting technical communication, problem-solving, modeling, safety, testing instrumentation, and technology assessment necessary for understanding contemporary technologies. The systems courses follow a similar course structure, while developing in-depth skills in the specific areas of communication, manufacturing, structural, and transportation systems. This systematic approach to learning about technology prepares students for the rapidly changing technological world by developing skills necessary for adapting to new technologies as they evolve.

The Technology Student Association (TSA) is also an essential component of Technology Education. Through TSA, students learn and apply technical, leadership, social, and civic skills. Students become effective team members through the use and development of interpersonal skills. TSA activities are an integral part of the Technology Education program and relate directly to the program outcomes.

MAJOR PROGRAM OUTCOMES

Programs in Technology Education are designed to help students:

1. Acquire general technological literacy.
2. Access, process, and share information through the use of contemporary tools and processes.
3. Acquire and apply design, problem solving, and leadership skills.
4. Assess the implications of technology upon society, the economy, and the environment.
5. Appreciate the importance of technology and its effect on all aspects of human behavior and systems.

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6. Use simple and complex tools and concepts found in communication, manufacturing, structural, and transportation systems.
7. Apply physical and social sciences, mathematics, and language and fine arts concepts and principles in an authentic manner.
8. Make wise career decisions.
9. Become more knowledgeable citizens and consumers regarding issues of technology.
10. Become responsible, participating, and successful citizens.

NATIONAL VOLUNTARY CURRICULUM STANDARDS

The Technology Education curriculum standards were initiated by the International Technology Education Association (ITEA) and funded by the National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA). The project, *Technology for All Americans*, has created a rationale, structure, and framework for Technology Education K-12. These standards identify what all students should know and be able to do with respect to understanding technology.

PROGRAM UNIQUENESS

Technology Education develops an understanding of complex technologies through the systems approach to problem solving. Student participate in designing, developing, monitoring, assessing, correcting, and improving technological systems.

Technology Education provides a foundation for students to make career decisions leading to other workforce development education courses of study.

Principles of Technology (PT) courses are recognized as science and/or mathematics courses under the following conditions:

1. PT I or II can be used as a science credit for high school graduation.
2. The NC University system recognizes PT I and II as a science credit for university admission.
3. Many community colleges provide postsecondary physics and/or mathematics credits for completion of PT I and II.

COURSE OFFERINGS

Technology Education Course Offerings, Grades 7-12, are the following:

Grades 7-8	Levels			
	Level 1	Level 2	Level 3	Level 4
Exploring Technology Systems	Fundamentals of Technology	Communication Systems		Technology Studies
		Manufacturing Systems		
		Structural Systems		
		Transportation Systems		
		Principles of Technology I	Principles of Technology II	

Course Descriptions for Technology Education

Communication Systems

Course Number: 8125
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces students to classical and contemporary visual and audio design, using state-of-the-art technology. Emphasis is placed on design, sketching, computer networking and operating systems, the Internet, electronic and optical communication systems, and concentrated areas of study determined by students and their teacher. Activities are structured to integrate physical and social sciences, mathematics, language and fine arts, and technical studies. Work-based learning strategies appropriate for this course include school-based enterprise, job shadowing, and service learning projects. This course and TSA technical and leadership activities develop skills essential for students interested in pursuing technical or engineering careers in communication related fields.

Prerequisite: Fundamentals of Technology

Exploring Technology Systems

Course Number: 8108
Recommended Maximum Enrollment: 18
Recommended Hours of Instruction: 67-90

This course is designed to allow students to explore basic technological concepts and related career fields. Topics include technology systems, technical drawing, graphic design, modeling skills, computer systems, electronics, and audio/visual production. Activities are structured to integrate physical and social sciences, mathematics, and language and fine arts. This course contributes to the development of a career development plan. Work-based learning strategies appropriate for this course include job shadowing and field trips. This course and TSA technical and leadership activities enhance the students' appreciation of technical and engineering career fields.

Prerequisite: None

Fundamentals of Technology

Course Number: 8110
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides hands-on experiences in principles and processes essential for the technology systems courses and develops a foundation for students interested in any technical field of study. Emphasis is placed on problem solving, design, technical communication, modeling, testing, evaluation, and implications of technology. Activities are structured to integrate physical and social sciences, mathematics, and language and fine arts. Work-based learning strategies appropriate for this course include job shadowing and field trips. This course and TSA technical and leadership activities develop skills essential for students interested in technical or engineering career fields.

Prerequisite: None

Manufacturing Systems

Course Number: 8115
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces students to principles of past and present manufacturing systems. Emphasis is placed on students designing, producing, and evaluating products using contemporary manufacturing methods. Activities are structured to integrate physical and social sciences, mathematics, and language and fine arts. Work-based learning strategies appropriate for this course include school-based enterprise, job shadowing, and service-learning projects. This course and TSA technical and leadership activities develop skills essential for students interested in pursuing careers in manufacturing as a designer, drafter, industrial manager, technician, or engineer.

Prerequisite: Fundamentals of Technology

Principles of Technology I

Course Number: 8011
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course provides a hands-on approach to understanding principles and concepts of technology and associated mathematics. Emphasis is placed on understanding mechanical, electrical, fluid, and thermal systems as they relate to work, force, rate, resistance, energy, and power. Activities are structured to integrate science, mathematics, and language arts. Work-based learning strategies appropriate for this course include job shadowing and field trips. This course and TSA technical and leadership activities enhance the skills of students interested in pursuing technical, engineering, or science related careers. Algebra I and Fundamentals of Technology are recommended prerequisites.

Prerequisite: None

Principles of Technology II

Course Number: 8012
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course is designed as a continuation of level I. Emphasis is placed on understanding mechanical, electrical, fluid, and thermal systems as they relate to force transformers, momentum, waves and vibrations, energy convertors, transducers, radiation theory, optical systems, and time constants. Activities are structured to integrate science, mathematics, and language arts. Work-based learning strategies appropriate for this course include job shadowing, and field trips. This course and TSA activities further enhance the skills essential for success in technical, engineering, and science related fields.

Prerequisite: Principles of Technology I

Structural Systems

Course Number: 8141
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed to introduce students to classical and contemporary elements, principles, and processes of structural systems. Architectural and engineering subjects are studied through research, design, project development, and assessment. Activities are structured to integrate physical and social sciences, mathematics, and language and fine arts. Work-based learning strategies appropriate for this course include school-based enterprise, job shadowing, and service-learning

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projects. This course and TSA technical and leadership activities develop skills essential for students interested in pursuing careers in building trades, city planning, architecture, or civil engineering.

Prerequisite: Fundamentals of Technology

Technology Studies

Course Number: 8005
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course allows students to pursue a topic of interest using knowledge and skills gained from previous workforce development and academic courses. Emphasis is placed on student-directed study and evaluation of a technological concept or application of technological tools. The assessment is structured to assure student identification of integrated science, mathematics, and language arts objectives. This course can be used for Technology Education career studies for students who have completed three technical credits in a career major. Work-based learning strategies appropriate for this course include school-based enterprise, job shadowing, service-learning projects, apprenticeship, cooperative education, and internship. This course and TSA technical and leadership activities allow students to pursue in-depth research and experimentation within technical and engineering fields.

Prerequisite: Fundamentals of Technology

Transportation Systems

Course Number: 8126
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course is designed to introduce students to land, water, air, and space transportation through experimentation and model making. Emphasis is placed on defining problems, designing, constructing, and testing prototypes. Activities are structured to integrate the physical sciences and mathematics. Work-based learning strategies appropriate for this course include school-based enterprise, job shadowing, and service-learning projects. This course and TSA technical and leadership activities develop skills essential for students interested in technical or engineering careers in transportation related fields.

Prerequisite: Fundamentals of Technology

FOR MORE INFORMATION

Technology Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, North Carolina 27601-2825

TRADE AND INDUSTRIAL EDUCATION

PROGRAM DESCRIPTION

Trade and Industrial Education is a secondary program designed to prepare students for careers in public service, industry, and the trade occupations through a sequence of learning experiences. Instructional units are provided in the use of layout, design, production, processes, assembly, quality control, maintenance, and service of industrial, commercial, and residential goods and products.

Design

As a component of workforce development education, Trade and Industrial Education provides students the opportunity to advance in a wide range of trade and industrial occupations by preparing them for initial employment, further education at the community college or university level, and/or business ownership. The major industrial areas are construction, manufacturing, transportation, communication, and public services. A balanced program of classroom study and practical work experiences produces competent workers who can manage resources, work cooperatively, organize and use information, understand complex systems, and apply appropriate technology. Cooperative education, internship, and apprenticeship experiences are available through the Trade and Industrial Education program.

Opportunities to develop and apply interpersonal leadership, social, civic, and business-related skills are provided through Vocational Industrial Clubs of America (VICA), the vocational student organization for Trade and Industrial Education students. As an integral part of the Trade and Industrial Education program, VICA activities enhance classroom instruction through leadership and teamwork activities. These activities directly relate to the major objectives of Trade and Industrial Education.

MAJOR PROGRAM OUTCOMES

The major outcomes for Trade and Industrial Education are to

- Develop basic manipulative and technological skills relative to industrial occupations through a combination of laboratory experiences and on-the-job training experiences.
- Provide technical information (principles and theory) with emphasis on the application of communications, mathematics, design, economics, science, and computer skills pertinent to employment and success in an industrial occupation.
- Provide instruction in such areas as human relations, safety and health, positive work habits, and employability skills.

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- Develop the skills needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

NATIONAL VOLUNTARY SKILL STANDARDS

The United States Departments of Education and Labor have initiated public-private partnerships to develop voluntary skill standards for various industries. Skills and performance levels needed by the American workforce to be competitive have been identified.

The seven National Voluntary Occupational Skill Standards used as guides in Trade & Industrial Education follow.

National Automotive and Technicians Education Foundations Inc. (NATEF) sets skills for the automotive and auto body courses. These national skills are in Automotive Technology I, II, & III and Collision Repair Technology II & III.

The Foundation for Industrial Modernization (FIM) sets skill standards for Computer Aided Drafting and Design (CADD) users. These national skill standards are used in Drafting I, Drafting - Architectural II & III, and Drafting - Engineering II & III.

The Electronic Industries Foundation (EIF) sets skills standards for the electronics industries. These national skill standards are used in Electronics I, II, & III.

The **Metalworking Industry Skill Standards Board** sets skill standards for the metalworking industry. These national skill standards are used in Metals Manufacturing Technology I, II, & III.

The **Graphic Arts Technical Foundation** (GRATF) sets skills for the printing industry. These national skill standards are used in Printing Graphics I, II, & III.

The **American Welding Society** (AWS) sets skills for the welding trades. These national skill standards are used in Welding Technology I, II, & III.

The **National Electrical Contractors Association** (NECA) sets skill standards for the electrical industry. These national skill standards are used in Electrical Trades I, II, & III.

National Voluntary Curriculum Standards for Construction Technology

The National Center for Construction Education and Research has created and disseminated construction training programs nationwide. This effort unites construction into one industry under one training program.

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The curriculum developed by the center provides standardized training across the country. Certified instructors, teaching in accredited training centers and schools, give students the skills they need to begin rewarding professional careers. Workers trained under this program have portable skills to move from one company to another and from one region of the country to another.

A National Registry operated by the National Center for Construction Education and Research exists to certify skills and help students, employees and employers. The transcript provides an accurate account of a potential employee's skill level and is accepted throughout the country.

STUDENT CREDENTIALING AND CERTIFICATION

Four industries offer national credentialing, certification, documentation and registry services to accredit high school Trade and Industrial Education programs. Each has rigid inspection, testing, and acceptance criteria and maintains a national registry that provides portable credentials. These agencies are the American Welding Society (AWS), National Automotive Technicians Education Foundation (Automotive Service Excellence, ASE), the National Center for Construction Education and Research (NCCER), and the National Institute for Metalworking Skills (NIMS).

North Carolina also requires certain trades, crafts, and technicians to be licensed. Licensure usually requires meeting age, education, experience, and examination criteria. Most Trade and Industrial Education programs provide the skills and knowledge appropriate to attaining licensure.

The North Carolina Department of Labor offers Registered Apprenticeship programs leading to the designation of journeyperson in all trades and crafts offered by Trade and Industrial Education. They also maintain a registry and portable credential.

The following chart illustrates credentialing and certification offerings for the five major Trade and Industrial Education clusters.

CERTIFYING AGENCIES

HIGH SCHOOL PROGRAM	AWS	ASE	NIMS	NCCER	L	A
COMMUNICATIONS						
Drafting						•
Printing Graphics						•
CONSTRUCTION						
Construction Technology				•	•	•
Cabinetmaking						•
Electrical Trades				•	•	•
Masonry				•		•
MANUFACTURING						
Electronics						•
Electro-Mechanical Technology						•
Metals Manufacturing Technology			•			•
Textile Technology						•
Welding Technology	•			•	•	•
PUBLIC SERVICE						
Cosmetology					•	•
TRANSPORTATION						
Automotive Service Technology		•				•
Collision Repair Technology		•				•

KEY	CERTIFYING AGENCIES
AWS	American Welding Society
ASE	Automotive Service Excellence, National Automotive Technicians Education Foundation
NIMS	National Institute for Metalworking Skills
NCCER	National Center for Construction Education and Research
L	Licensure, State
A	Apprenticeship, Department of Labor

PROGRAM UNIQUENESS

- The scope and sequence of Trade and Industrial Education includes program offerings in 14 distinct technologies.
- The Construction Technology curriculum is guided and supported by the North Carolina Construction Education Alliance, which standardizes education and training for public schools, community colleges, registered apprenticeship programs, college and university programs, and construction industry training and education programs.

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- The majority of the apprenticeable occupations listed by the Department of Labor are related to technical skills contained in Trade and Industrial Education courses.

COURSE OFFERINGS

Trade and Industrial Education course offerings, grades 9-12, are the following:

Levels			
Level 1	Level 2	Level 3	Level 4
Introduction to Trade and Industrial Education		Trade & Industrial Work Development I	Trade & Industrial Work Development II
	Communications Drafting I	Drafting - Architectural II	Drafting - Architectural III
		Drafting - Engineering II	Drafting - Engineering III
	Printing Graphics I	Printing Graphics II	Printing Graphics III
	Scientific and Technical Visualization I	Scientific and Technical Visualization II	
	Construction Construction Technology I	Construction Technology II	Construction Technology III
		Cabinetmaking II	Cabinetmaking III
	Electrical Trades I	Electrical Trades II	Electrical Trades III
	Masonry I	Masonry II	Masonry III
	Manufacturing Electro-Mechanical Technology I	Electro-Mechanical Technology II	Electro-Mechanical Technology III
	Electronics I	Electronics II	Electronics III
	Metals Manufacturing Technology I	Metals Manufacturing Technology II	Metals Manufacturing Technology III
	Textile Technology I	Textile Technology II	Textile Technology III
	Welding Technology I	Welding Technology II	Welding Technology III
	Public Service	Cosmetology I	Cosmetology II
	Transportation Automotive Service Technology I	Automotive Service Technology II	Automotive Service Technology III
		Collision Repair Technology II	Collision Repair Technology III
			Trade and Industrial Education Advanced Studies

Trade and Industrial Education
Course Descriptions

Automotive Service Technology I

Course Number: 7511
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces basic automotive skills and job opportunities in the auto repair industry. Topics include engine theory, automotive service preventive maintenance, brake repair, electrical systems trouble shooting, safety, test equipment, and measuring. Automotive Service Technology I is used as a prerequisite for Automotive Service Technology II and Collision Repair Technology II. Skills in science, mathematics, thinking, and leadership are reinforced in this course. Work-based learning strategies for this course should include field trips, internships, job shadowing, and cooperative on-the-job training. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Completed or enrolled in Algebra I

Automotive Service Technology II

Course Number: 7512
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course emphasizes the advanced skills necessary in the automotive industry. Specific instructions are given in troubleshooting, automotive preventive maintenance, minor engine repair, engine performance, and brakes. Reading, math, science, and principles of technology are reinforced in this course. The level II course helps prepare students for Automotive Service Excellence (ASE) technician certification. Work-based learning experience strategies appropriate for this course are field trips, job shadowing, internships, cooperative on-the-job- training, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Automotive Service Technology I

Automotive Service Technology III

Course Number: 7513
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This advanced course in auto repair puts emphasis on the practical application of skills and techniques necessary in the automotive industry. Specific instruction is given in engine performance, drive-ability, ignition, and fuel system diagnosis/repair, emission control systems, antilock brakes, electrical diagnosis, steering and suspension. This course further prepares students for Automotive Service Excellence (ASE) certification and further education. Skills in leadership, safety, problem solving, and planning are reinforced in this course. The work-based learning strategies appropriate for this course are cooperative on-the-job training, internships, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Automotive Service Technology II

Cabinetmaking II

Course Number: 7622
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course introduces career information, employment opportunities, and skills required for work in the cabinetmaking industry. Topics include tools and equipment, theory and practice, types of woods, finishes, styles, bonds and fasteners. Skills in mathematics, reading, leadership, safety, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisites: Construction Technology I

Cabinetmaking III

Course Number: 7623
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers development of more advanced knowledge and skills in the cabinet industry. Emphasis is placed on construction principles as applied to mass production, and the construction and installation of cabinet drawers and doors. Skills in leadership, safety, mathematics, planning, and problem solving are reinforced in this course. Work-based strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Cabinetmaking II

Collision Repair Technology II

Course Number: 7522
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers basic collision repair practices, career information, and employment opportunities. Topics include welding, cutting, proper use of collision repair tools and equipment, and panel repairs using various substances. Skills in mathematics, science, reading, leadership, business and problem solving are reinforced. The work-based strategies appropriate for this course are job shadowing, internships, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Automotive Service Technology I

Collision Repair Technology III

Course Number: 7523
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course stresses practical application of advanced skills in collision repair. Specific instructions in panel repair, refinishing, painting, frame and unibody analysis, and estimation skills are stressed. The level III course helps prepare students for ASE certification. Skills in safety, mathematics, science, leadership, and business are reinforced. Work-based learning strategies appropriate for this course are internships, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Collision Repair Technology II.

Construction Technology I

Course Number: 7721
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides a basic introduction to construction work and the technical aspects of carpentry and cabinetmaking. Topics include safety, measurement, and the identification, selection, and use of tools, equipment, lumber, materials, and fasteners. Basic skills, leadership, career development, thinking and reasoning skills, mathematics, and principles of technology are reinforced. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite None

Construction Technology II

Course Number: 7722
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers advanced technical aspects of carpentry with emphasis on development of skills introduced in level I. Topics include plans, framing, footings, foundations, roofing, flashing, wall sheathing, insulation, vapor barriers, gypsum board, and underlayment. Skills in measurement, leadership, safety, mathematics, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisites Construction Technology I and Algebra I

Construction Technology III

Course Number: 7723
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers issues related to planning, management, finance, sales, labor, technology, community, health, environment, and safety. Topics include estimating, leveling instruments, forms, special framing, interior and exterior finishing, cabinets, built-ins, and metal studs. Skills in technical subjects, production, leadership, safety, problem solving, reading, and mathematics are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Construction Technology II

Cosmetology I

Course Number: 7811
Recommended
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 600

This course introduces developmental skills, employment opportunities, and career information required for the cosmetology industry. Topics include facials, manicures, hair cutting, chemical relaxing and restructuring, wet hair styling, and hair coloring and lighting. Skills in mathematics, science, biology, leadership, and problem solving are reinforced in this course. The work-based learning strategy appropriate for this course is a school-based enterprise. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: None

Cosmetology II

Course Number: 7812
Recommended Maximum Enrollment: 16
Recommended Hours of
Instruction: 600

This course provides advanced development of process, techniques, and skills introduced in Cosmetology I. Topics include hair coloring techniques, chemical servicing; identification and treatment of disorders of the skin; scalp and hair; manicuring; pedicuring; artificial nails; hair removal; and permanent waving techniques. Students will receive 1200/1500 hours of training to prepare them for the Cosmetology Board Exam. Skills in chemistry, mathematics, business, thinking, and communication are reinforced in this course. The work-based learning strategy appropriate for this course is a school-based enterprise. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Cosmetology I

Drafting I

Course Number: 7921
Recommended
Maximum
Enrollment: 20
Recommended Hours of
Instruction: 135-180

This course introduces students to the use of simple and complex graphic tools used to communicate and understand ideas and concepts found in the areas of architecture, manufacturing, engineering, science, and mathematics. Topics include problem-solving strategies, classical representation methods such as sketching, and geometric construction techniques as well as CAD (computer assisted design), orthographic projection, and oblique and isometric drawings. Skills in communication, mathematics, science, leadership, and problem-solving are reinforced in this course. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: None

Drafting - Architectural II

Course Number: 7962
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course is focused on the principles, concepts, and use of complex graphic tools used in the field of architecture, structural systems, and construction trades. Emphasis is placed on the use of CAD tools in the creation of floor plans, wall sections, and elevation drawings. Mathematics, science, and visual design concepts are reinforced. Work-based learning strategies appropriate for this course are apprenticeship and cooperative education. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Drafting I

Drafting - Architectural III

Course Number: 7963
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course introduces students to advanced architectural design concepts. Emphasis is placed on the use of CAD tools in the design and execution of site and foundation plans as well as topographical information and detail drawings of stairs and wall sections. Teaming and problem-solving skills are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeships, internship, and cooperative education. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Drafting - Architectural II

Drafting - Engineering II

Course Number: 7972
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course focuses on engineering graphics related subjects introducing the student to symbol libraries, industry standards, and sectioning techniques. Topics include coordinate systems, principles of machine processes and gearing, and the construction of 3-D wireframe models using CAD. Mathematics, science, and mechanical engineering concepts involving the working principles and design of cams and gears are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeship, internships, and cooperative education. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Drafting I

Drafting - Engineering III

Course Number: 7973
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This course introduces the student to advanced engineering concepts. Using CAD tools, topics studied include descriptive geometry, geometric tolerancing, and advanced engineering design concepts such as surface and solid modeling. Science and mathematic concepts are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeship, internships, and cooperative education. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is recommended prerequisite.

Prerequisite Drafting - Engineering II

Electrical Trades I

Course Number: 7741
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces residential wiring, electrical installation, and service. Topics include basic electricity, electrical construction codes and practices, the National Electrical Code, the use of test equipment, and electrical hand and power tools. Skills in safety, mathematics, leadership, and problem solving are reinforced in this course. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite None

Electrical Trades II

Course Number: 7742
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course provides advanced instruction in residential wiring and introduction to electrical theory including AC and DC circuits. Emphasis is placed on test equipment, electrical color coding, conduit bending and installation, electrical measurements, use of polyphase current, specialty tools, transformers, and generators. Skills in safety, leadership, reading, mathematics, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Electrical Trades I

Electrical Trades III

Course Number: 7743
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers advanced and detailed instruction in the National Electrical Code and electrical principles and practices. Topics include test equipment, installation of wire in conduit, motors, transformers, generators, uses of different voltages, and control panels. Skills in leadership, safety, problem solving, and planning are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Electrical Trades II

Electronics I

Course Number: 7631
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers electronic practices and fundamentals, roles of electronics in communications and industry, and career development. Topics include safety, tools, direct current, schematics, soldering, measuring electricity, Ohm's/Watt's/Kirchoff's Laws, power, and circuits. Leadership skills, science, thinking skills, and principles of technology are reinforced. Job shadowing and internships are appropriate work-based learning strategies for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Algebra I

Electronics II

Course Number: 7632
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers advanced electronic practices and principles, special equipment and materials, and employment opportunities. Topics include safety, alternating current, inductive/capacitive/RCL circuits, semiconductor devices, rectifier/filter circuits, and bipolar transistors. Skills in leadership, safety, mathematics, reading, problem solving, tools, and test equipment are reinforced. Work-based learning strategies appropriate for this course are job shadowing, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Electronics I

Electronics III
Course Number: 7633
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course stresses hands-on experiences with trainers and real equipment to develop job competencies in electronics. Topics include safety, transistor circuits, logic devices, logic circuits, microprocessors, and applications of electronic systems. Skills in leadership, safety, science, thinking, and planning are reinforced. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II is a recommended prerequisite.

Prerequisite Electronics II

Electro-Mechanical Technology I
Course Number: 7651
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers basic industrial machinery maintenance practices, overview of maintenance field, career information, and employment opportunities. Topics include safety, tools, equipment, measurement, blueprints, drive/support systems, electricity, welding (SMAW), plumbing, and fluid power. Basic skills, thinking skills, and principles of technology are reinforced. Job shadowing and internships are appropriate work-based learning strategies for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite None

Electro-Mechanical Technology II

Course Number: 7652
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers advanced industrial machinery maintenance practices including mechanical physics, electronics, and heating/ventilation/air conditioning. Topics include drive systems, welding (GMAW), oxyfuel gas cutting (OFC), plumbing, pipe fitting, fluid power, and heating/ventilation/air conditioning. Skills in leadership, safety, mathematics, reading, problem solving, electricity, welding (SMAW), and measuring are reinforced. Work-based learning strategies appropriate for this course are job shadowing, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Electro-Mechanical Technology I

Electro-Mechanical Technology III

Course Number: 7653
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course stresses hands-on experiences with trainers and real equipment to develop job competencies in industrial machinery maintenance. Topics include couplings, gear drives, bearings, packings, seals, motors/controls, logic controllers, pumps, hydraulics, pneumatics, and refrigeration. Leadership skills, safety, thinking, planning, welding, electricity/electronics, plumbing, heating/ventilation/air conditioning, and drive/support systems are reinforced. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II is a recommended prerequisite.

Prerequisite Electro-Mechanical Technology II

Introduction to Trade and Industrial Education (ITIE)

Course Number: 7400
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces students to two to six career majors available in T&I Education. Students may rotate to different laboratories for instruction. Topics include level I objectives from each of the T&I course career majors being introduced. Skills in communication, science, mathematics, and leadership are reinforced in this course. Work-based learning strategies appropriate for this course are field trips and job shadowing. Hands-on work experiences and VICA leadership activities provide opportunities to enhance classroom instruction and career development.

Prerequisite None

Masonry I

Course Number: 7711
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces the nature of masonry technology, materials and supplies, and employability skills. Topics include safety, layout, tools, leveling, plumbing, use of straight-edge, and jointing brick and block in wall construction. Reading, mathematics, problem solving, and principles of technology are reinforced in this course. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite None

Masonry II

Course Number: 7712
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course provides a continuation of masonry skills, estimating, blueprint reading, and building codes. Topics include constructing walls, corners, sills, and similar structures using a variety of bonds and materials. Skills in safety, leadership, reading, mathematics, problem solving, and career development are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences

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and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Masonry I

Masonry III

Course Number: 7713
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course provides advanced masonry skills, leadership development, and the preparation of technical presentations. Topics include constructing composite walls, steps, arches, lattice walls, sidewalks, brick and concrete pavers, window sills, chimneys, and fireplaces. Skills in safety, mathematics, reading, problem solving, and employability skills are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Masonry II

Metals Manufacturing Technology I

Course Number: 7641
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces various manufacturing processes and job opportunities in manufacturing with emphasis on machining metals parts. Topics include safety, math, measurement, blueprint reading, layout, bench work, sawing, drilling, turning, and grinding. Science, thinking skills, and principles of science are reinforced. Job shadowing and internships are appropriate work-based learning strategies for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Completed or enrolled in Algebra I

Metals Manufacturing Technology II

Course Number: 7642
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course provides advanced instruction in manufacturing and introduces computer assisted drafting/manufacturing and numerical control processes. Topics include safety, environmental protection, quality control, metallurgy, materials, layout, assembly, sawing, turning, milling, grinding, computer numerical control, computer-aided manufacturing, welding, and maintenance. Skills in leadership, safety, mathematics, reading, problem solving, blueprint reading, and precision measuring are reinforced. Work-based learning strategies appropriate for this course are job shadowing, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Metals Manufacturing Technology I

Metals Manufacturing Technology III

Course Number: 7643
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course includes specialized instruction in metals manufacturing and related processes as required by local industry. Topics include advanced turning and milling operations, computer-aided machining and computer numerical control. Skills in leadership, safety, basics, thinking, planning, and welding are reinforced. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II is a recommended prerequisite.

Prerequisite: Metals Manufacturing Technology II

Printing Graphics I

Course Number: 7911
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course introduces graphic communications and imaging technology with emphasis on printing production, publishing, and packaging industries. Topics include safety, layout, design, electronic imaging, reproduction photography, image assembly, platemaking, duplicator operations, and binding. Thinking skills, science, leadership, and visual art concepts are reinforced in this course. Job shadowing and internships are appropriate work-based learning strategies for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: None

Printing Graphics II

Course Number: 7912
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course covers the entire printing graphic process, from design stage, to printing, bindery, and distribution stages. Topics include advanced safety, layout, design, electronic imaging, reproduction photography, image assembly, platemaking, and duplicator operations. Skills in leadership, reading, math, safety, science, and visual art concepts are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeship, cooperative education, and internship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry and Art I are recommended prerequisites.

Prerequisite: Printing Graphics I

Printing Graphics III

Course Number: 7913
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course engages students in advanced team and independent graphic communication studies related to areas of interest. Topics include multimedia concepts, screen printing, electronic imaging, offset printing, and flexography. Skills in leadership, safety, thinking, planning, science, and visual art concepts are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeship, cooperative education, and internships. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II and Art II are recommended prerequisites.

Prerequisite: Printing Graphics II

Scientific and Technical Visualization I

Course Number: 7901
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This state-of-the-art course introduces students to the use of complex graphic tools concurrently with the students' study in an academic area. Emphasis is placed on the use of complex graphic tools to better understand a given mathematics, and/or scientific concept. Visualization activities may include graphics of mathematical models, molecular structures, topographical maps, stratospheric and climate models, and statistical analysis. Computer, communication, math and science concepts are reinforced in this course. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: None

Scientific and Technical Visualization II

Course Number: 7902
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course provides students with advanced skills in the use of complex visualization tools for the study of math and/or sciences concepts. Students design and develop increasingly complex data and concept driven visualization models. Focusing on scientific and technical concepts, students learn how to communicate and analyze phenomena using statistical graphic and conceptual visualization computer applications. Communication, computer, technical, mathematics, and science skills are reinforced in this course. Work-based learning strategies appropriate for this course are apprenticeship, internships, and cooperative education. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Scientific and Technical Visualization I

Textile Technology I

Course Number: 7611
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers the manufacturing processes in the textile industry as well as the work ethics, opportunities, and occupations. Topics include plant operations, safety, fiber/yarn/fabric manufacturing and machinery, and dyeing/finishing methods and machinery. Mathematics, thinking skills, and principles of science are reinforced. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite Completed or enrolled in Algebra I

Textile Technology II

Course Number: 7612
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course provides instruction in textile manufacturing with emphasis on group activities aimed at solving specific textile problems. Topics include safety, yarn manufacturing/equipment, fabric formation, dyeing, finishing, fiber science, electronics, mathematics, and industrial engineering. Skills in leadership, safety, reading, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are job shadowing, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Textile Technology I

Textile Technology III

Course Number: 7613
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180 or 270-360 with work-based component

This course provides in-depth instruction on textile manufacturing combined with a cooperative education or apprenticeship component. Topics include plant organization and responsibilities, textile math, woven fabric design via computer, and a research paper. Skills in leadership, safety, thinking, planning, and mathematics are reinforced. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II is a recommended prerequisite.

Prerequisite Textile Technology II

Trade and Industrial Advanced Studies

Course Number: 7999
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 135-180

This culminating, career-focused course for seniors in T&I programs includes a research paper, product, and presentation. Emphasis is on students demonstrating their abilities to use content and apply knowledge to real-world situations. Skills in leadership, writing, speaking, problem solving, mathematics, and science are reinforced in this course. It is important to connect work-based learning such as internship, apprenticeship, and cooperative education to this course. Students work under the guidance of a teacher-facilitator in collaboration with community members, business representatives, and other school-based personnel. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Three technical credits in Trade and Industrial Education.

Trade and Industrial Work Development I

Course Number: 7821
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180
Plus paid work experience

This course combines classroom instruction with skilled on-the-job training in the areas of communication, construction, manufacturing, transportation and related trade areas. In the school-based learning part of the course, emphasis is placed on team development, quality service and products, customer satisfaction, employment acquisition, career analysis, safety standards, and leadership. Students may enroll in the T&I Work Development course, the trade program, or both. Skills reinforced in this course are technical mathematics, measuring, reading, writing, and communication skills. Work-based learning strategies appropriate for this course include cooperative education and apprenticeships. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: None

Trade and Industrial Work Development II

Course Number: 7822
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135- 180
Plus paid work experience

This course provides skills necessary to become successful in a trade and industrial occupation. In the school-based learning part of the course, emphasis is placed on total quality teamwork, decision-making, running and controlling projects, communication skills, business ownership, and financial planning. Students in this program may enroll in the T&I Work Development course, the trade program, or both. Skills reinforced in this course are technical mathematics, reading, communication, and leadership. Work-based learning strategies appropriate for this course include cooperative education, apprenticeships, and internships. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite: Trade and Industrial Work Development I

Welding Technology I

Course Number: 7661
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 135-180

This course covers basic industrial and construction welding practices, occupation characteristics, and employment opportunities. Topics include safety, tools, measurement, oxyfuel gas cutting processes, shielded metal arc welding (SMAW), and weld inspection. Science, thinking skills, mathematics, leadership skills, and principles of technology are reinforced in this course. Job shadowing is an appropriate work-based learning strategy for this course. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development.

Prerequisite None

Welding Technology II

Course Number: 7662
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course introduces advanced welding and cutting practices used in industry and construction and emphasizes hands-on experience. Topics include thermal cutting processes, gas metal (GMAW), flux cored (FCAW), and gas tungsten (GTAW) arc welding. Skills in leadership, safety, SMAW, mathematics, reading, and problem solving are reinforced in this course. Work-based learning strategies appropriate for this course are job shadowing, cooperative education, and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Geometry is a recommended prerequisite.

Prerequisite Welding Technology I

Welding Technology III

Course Number: 7663
Recommended Maximum Enrollment: 16
Recommended Hours of Instruction: 270-360

This course stresses practical application of advanced welding, cutting, inspection, testing, blueprint reading, and fabrication techniques. Topics include measuring and layout tools, blueprints, SMAW, GMAW, FCAW, GTAW, and weld inspection and testing. Skills in leadership, safety, science, thinking, and planning are reinforced in this course. Work-based learning strategies appropriate for this course are cooperative education and apprenticeship. Hands-on work experiences and VICA leadership activities provide many opportunities to enhance classroom instruction and career development. Algebra II is a recommended prerequisite.

Prerequisite Welding Technology II

LOCAL COURSE OPTIONS

Schools may offer one or more specialized courses not included in the Programs of Study. These courses should meet a local economic need. Options may include:

- Aerospace
- Air Conditioning/Refrigeration
- Appliance Repair
- Blueprint Reading
- Computer Engineering Technology
- Commercial Art
- Diesel Mechanics
- Law Enforcement
- Marine Occupations
- Photography
- Plumbing
- Programming & Broadcasting
- Upholstery

Refer to Part I, Local Course Options, and Appendix B for instructions on how to offer these courses.

FOR MORE INFORMATION

Trade and Industrial Education
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 North Wilmington Street
Raleigh, NC 27601-2825

Part III
Special Populations Services

DESCRIPTION

The primary function of special populations coordination is to ensure that members of special populations receive adequate services and job skill training.

Special services are coordinated for special populations to ensure their access to, progress through, and success in the regular workforce development education programs. Students with the greatest needs have top priority for services. Coordinating with other service providers reduces the number of direct service contacts and the duplication of efforts. Being non-instructional personnel, Special Populations Coordinators have the major responsibilities for ensuring such coordination.

MAJOR FUNCTIONS

The major functions of the position include the following:

1. Outreach and Recruitment
2. Assessment/Prescription
3. Coordination with other Service Providers
4. Monitoring Access, Progress, and Success
5. Annual Accountability/Planning

Examples of appropriate activities for each of the major functions include the following.

Outreach

Outreach and Recruitment
- Recruitment, enrollment, and placement activities
- Provision of information about vocational opportunities
- Development of Career Development Plans

Assessment

Assessment/Prescription
- Identification of members of special populations
- Assessment of special needs
- Development and implementation of the Special Populations Component to the Career Development Plan
- Participation on the School-Based Committee for the development and implementation of the vocational and transitional components of the Individualized Education Program (IEP)
- Coordination of special services
- Maintenance of a workforce development education resource laboratory
- Assistance with fulfilling transitional services
- Provision of guidance, counseling, and career development activities

Coordination

Coordination with Other Service Providers

- Collaboration with vocational teachers and other relevant service providers
- Coordination of services with JTPA, Special Education, Vocational Rehabilitation, community agencies, business, and industry
- Facilitation of inservice training
- Coordination of work experiences and field trips
- Provision of guidance, counseling, and career development activities

Monitoring

Monitoring Access, Progress, and Success

- Maintenance of records documenting access to, progress through, and successful completion of workforce development education programs
- Analysis of Vocational Education Information System (VEIS) data
- Documentation of the attainment of performance standards

Planning

Annual Accountability/Planning

- Identification of programs needing improvement
- Description of strategies to improve supplementary services
- Evaluation of incentives and adjustments
- Determination of case load and future personnel needs
- Development of a Plan of Work
- Provision of input about local improvements to the vocational/workforce development director

Major Service Area Outcomes

As a result of special services and activities, special populations enrollees should improved outcomes in three areas. These areas are access to, progress through, and success in comprehensive workforce development education. Comprehensive workforce development education is comprised of preparatory programs and services, instructional programs and services, and transition services.

1. Preparatory Programs and Services
    - Special populations enrollees have equal access to the recruitment and enrollment activities for all workforce development education programs.
    - Each special populations enrollee has a comprehensive, coherent Career Development Plan (CDP) incorporating his/her chosen vocational education program.
2. Instructional Programs and Services
    - Special populations enrollees have equal access to the full range of workforce development education opportunities.
    - Special populations enrollees make progress in basic and vocational skills through the use of supplementary services documented on the individualized education program (IEP) or the Special Populations Component to the CDP.

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- Special populations enrollees successfully progress through and complete their educational programs with incentives and adjustments.

3. Transition Services
   - Disabled students 16 and above have a transition component to the IEP.
   - With transition services, special populations enrollees are equitably able to enter post school employment, further education, and/or training.

DEFINITIONS

Disadvantaged

"Disadvantaged" includes all individuals (other than disabled individuals) who have economic or academic disadvantages and who require special services and assistance in order to enable them to succeed in workforce development education programs. This term includes individuals who are members of economically disadvantaged families, migrants, individuals who have limited English-proficiency, and individuals who are dropouts or who are identified as potential dropouts from secondary school. This definition does not include individuals with learning disabilities.

1. Academically disadvantaged
   An academically disadvantaged student is a student (other than disabled) who requires special services in order to succeed in Workforce Development Education programs and who meets one or more of the following standards as an indicator of a low achiever:

   - Scores at or below the 25th percentile on standardized achievement or aptitude tests

   - Has secondary grades below 2.0 on a 4.0 scale (where the grade "A" equals 4.0)

   - Fails to attain minimal academic competencies

2. Economically disadvantaged
   An economically disadvantaged student is a student (other than disabled) who requires special services in order to succeed in workforce development education programs and who meets one or more of the following standards as an indicator of low income:

   - Eligible for free or reduced school lunch

   - Eligible for Aid to Families with Dependent Children or other public assistance program

   - Foster Child

Continued on next page

- Eligible for food stamps

- Family income determined as low according to the U.S. Secretary of Education or the latest available data from the Department of Commerce.

C. Other Categories
Other categories of students who may require special services in order to succeed in workforce development education and who may be classified under the category of disadvantaged are defined below:

- *Limited English proficiency* - persons who have difficulty understanding the English language and/or English is not the common language of communication in their home environment.

- *Migrants* - agricultural workers or those in the fishing industry who have moved with their families from one school district to another during the past year to secure temporary or seasonal employment in agricultural-related food processing or fishing activities.

- *Dropouts* - persons who have left school for any reason before graduating or completing a program of study and without transferring to another school.

- *Potential dropouts* - persons who may reasonably be expected to leave school for any reason before graduating or completing a program of study and without transferring to another school. Students in this category usually exhibit one or more of the following characteristics:

  a. Consistently low achievement
  b. High rate of absenteeism
  c. No motivation
  d. Constant discipline problems
  e. Delinquent behavior in school and in the community

Disabled

"Disabled," when applied to individuals evaluated under part B of the Individuals with Disabilities Education Act of 1990 in North Carolina, refers to individuals who are identified as autistic, behaviorally-emotionally handicapped, deaf-blind, hearing impaired, mentally handicapped, multihandicapped, orthopaedically impaired, other health impaired, specific learning disabled, speech-language impaired, traumatic brain injured, and visually impaired who, by reason thereof, require Special Education and related services, and who, because of their handicapping condition, cannot succeed in regular workforce development education programs without special assistance. These disabled individuals must be certified by standards established by the Division of Exceptional Children Services.

Definitions of Disabling Conditions

1. **Mentally Handicapped.** Mentally handicapped refers to those individuals with significantly sub-average general cognitive functioning and a reduced rate of learning. This condition exists concurrently with deficits in adaptive behavior, is manifested during the developmental period, and adversely affects the student's educational performance. (This includes Trainable and Educable Mentally Handicapped and severe profound.)

2. **Hearing Impaired.** Hearing impaired children are those with hearing losses that are handicapping educationally and developmentally and who, with or without amplification, may require various instructional modifications and related services in order to make full use of school experiences. Hearing impaired is a generic term which includes all hearing losses ranging from mild to profound.

3. **Multihandicapped.** Multihandicapped students have a combination of two or more handicaps (such as mentally handicapped/emotionally handicapped, mentally handicapped/blind, deaf/blind etc.), the combination of which causes such developmental and educational problems that the student cannot be properly accommodated in special programs that primarily serve one handicapping condition. Students who are severely multihandicapped have serious primary disabilities that are cognitive and/or behavioral and require significantly more resources than are provided for less handicapped children.

4. **Visually Impaired.**
   - Functionally blind children have so little remaining vision that they must use Braille as their reading medium.
   - Partially sighted children have a loss of vision, but are able to use regular or large type as their reading medium. These will generally be children who have a visual acuity between 10/70 and 20/200 in the better eye after correction.
   - Children who are legally blind have a visual acuity of 20/200 or less in the better eye after correction or a peripheral field so contracted that the widest diameter extends an arc no greater than 20 degrees.

5. **Other Health Impaired.** Other health impaired refers to chronic or acute health problems such as heart conditions, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, diabetes, genetic impairments, or some other illness that may cause a student to have limited strength, vitality, or alertness to such an extent that special educational services are necessary.

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6. **Behaviorally/Emotionally Handicapped.** One who, after receiving specially designed educational support services and intervention strategies in the regular educational setting, still exhibits patterns of situationally inappropriate interpersonal or intrapersonal behavior of such frequency, duration, and intensity to disrupt the student's own learning process. Frequency, duration, and intensity are long-standing patterns of behavior that occur regularly and often enough to consistently interfere with the student's own learning process.

7. **Speech and Language Impaired.** A student with a speech and language impairment has a disorder in articulation, language, voice, and/or fluency. A speech and language impairment may range in severity from mild to severe. It may be developmental or acquired, and students may demonstrate one or any combination of the four parameters listed above. A speech and language impairment may result in a primary handicapped condition or it may be secondary to other handicapping conditions.

8. **Orthopaedically Impaired.** An orthopaedically impaired child possesses a severe orthopaedic impairment that adversely affects his/her educational performance. The term includes impairments caused by congenital abnormalities and impairments from other causes.

9. **Specific Learning Disabilities.** Specific learning disabilities is an inclusive term used to denote various processing disorders presumed to be intrinsic to an individual (e.g., acquisition, organization, retrieval, or expression of information; effective problem-solving behaviors). For the purpose of special educational services, a student classified as learning disabled is one who, after receiving instructional intervention in the regular education setting, has a substantial discrepancy between ability and achievement. The disability is manifested by substantial difficulties in the acquisition and use of skills in listening comprehension, oral expression, written expression, reading, and/or mathematics. A learning disability may occur concomitantly with, but is not the primary result of, other handicapping conditions and/or environmental, cultural, and/or economic influences.

10. **Autistic.** Autism refers to a severe and chronic developmental disorder that affects communication and behavior. The essential features include disturbances of:

    - developmental rates and/or sequence
    - responses to sensory stimuli

- speech, language and cognitive capacities
- capacities to relate to people, events, and objects

Associated features include stereotyped motor patterns and erratic expression of emotions. Most children classified as autistic function at a mentally handicapped level of intellectual development.

11. **Deaf-Blind.** Deaf-blind students have concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs.

"Disabled" under Section 504 of the Rehabilitation Act of 1973 means that an individual has a physical or mental impairment. The impairments include any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological; musculoskeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive, digestive, genito-urinary; hemic and lymphatic; skin; and endocrine; or any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities.

Suggested Workforce Development Education Service Delivery Model Grades 6-12

Local school administrative units shall make provisions to provide a wide range of support services as needed by members of special populations who are enrolled in a Workforce Development Education program. The chart on page 119 provides an example of a comprehensive service delivery system.

All services and activities must be provided as specified in the following publications:

1. *Challenge: A Handbook for Serving Members of Special Populations*
2. *Procedures Governing Programs and Services for Children with Special Needs*

Enrollment

To ensure that members of special populations receive adequate services and job skill training, local education agencies are encouraged to lower the maximum class size. One of the best practices of exemplary programs is to limit the number of disabled students to five per regular workforce development education class. Special programs for disadvantaged/handicapped students must adhere to the following student-teacher ratio:

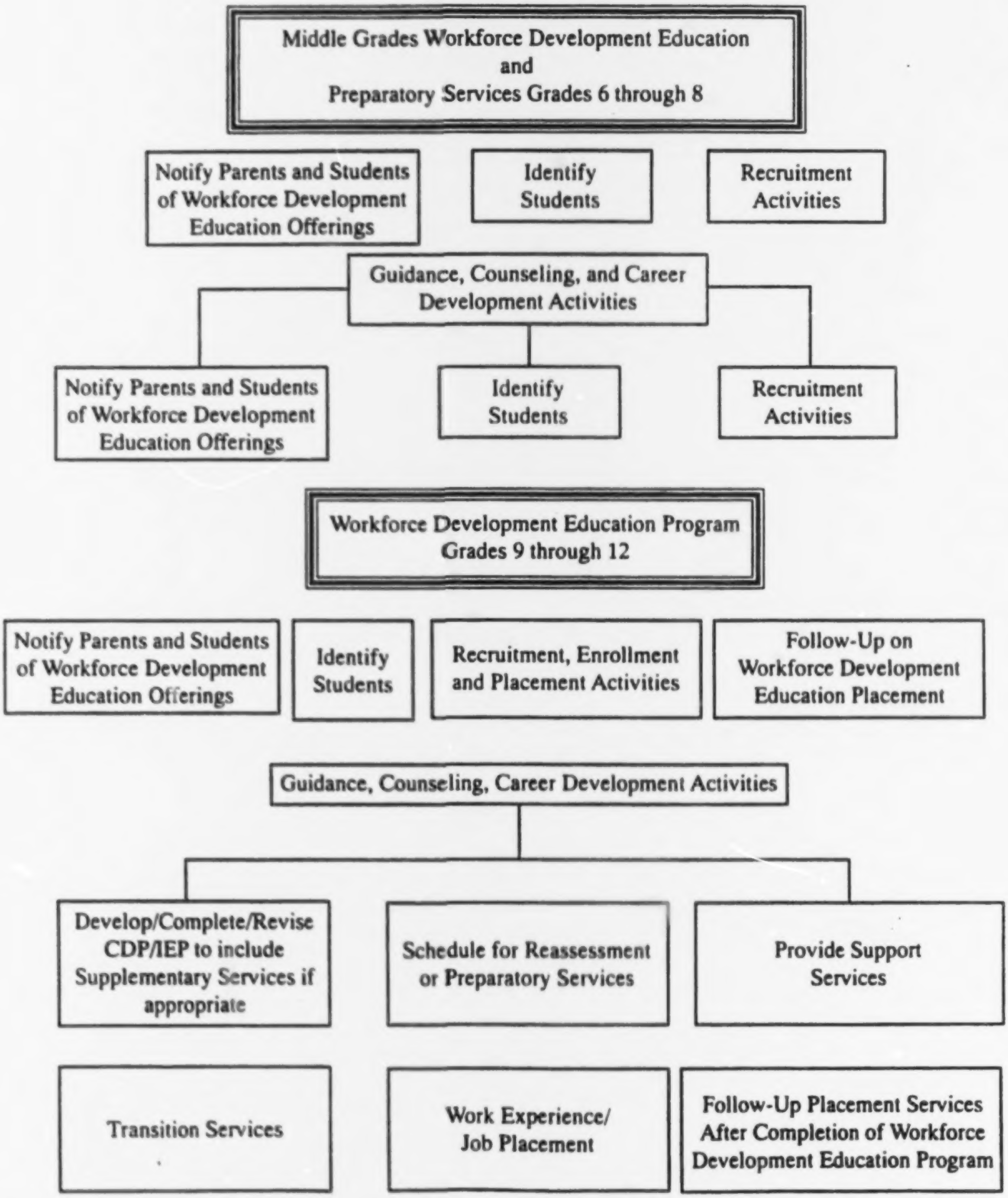
1. Disadvantaged – up to 16 students per class period.
2. Educable Mentally Handicapped – up to 16 students per class period and no more than 40 students a day.

3. Learning Disabilities – up to 12 students per class period.
4. Trainable Mentally Handicapped – up to six (6) students per teacher per class period; 7-12 students require one teacher and one assistant; and 13-16 students require one teacher and two assistants per class.
5. Orthopaedically Handicapped – up to 12 students per class period with one teacher and one assistant.
6. Behaviorally Emotionally Handicapped – up to 8 students per special course with one teacher and one assistant.

FOR MORE INFORMATION

Special Needs
Workforce Development Education
Division of Instructional Services
North Carolina Department of Public Instruction
301 N. Wilmington Street
Raleigh, North Carolina 27601-2825

Special Populations
Suggested Workforce Development Education Service Delivery Model
Grades 6-12


Middle Grades Workforce Development Education and Preparatory Services Grades 6 through 8
Notify Parents and Students of Workforce Development Education Offerings
Identify Students
Recruitment Activities
Guidance, Counseling, and Career Development Activities
Notify Parents and Students of Workforce Development Education Offerings
Identify Students
Recruitment Activities
Workforce Development Education Program Grades 9 through 12
Notify Parents and Students of Workforce Development Education Offerings
Identify Students
Recruitment, Enrollment and Placement Activities
Follow-Up on Workforce Development Education Placement
Guidance, Counseling, Career Development Activities
Develop/Complete/Revise CDP/IEP to include Supplementary Services if appropriate
Schedule for Reassessment or Preparatory Services
Provide Support Services
Transition Services
Work Experience/ Job Placement
Follow-Up Placement Services After Completion of Workforce Development Education Program

Vocational Student Organizations

DIVISION OF INSTRUCTIONAL SERVICES
WORKFORCE DEVELOPMENT
NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION

REVISED, 1987, 1992, 1996, 1997

Administration of Vocational Student Organizations (VSOs)

Intent and Purposes of Vocational Student Organizations

Vocational student organizations are for individuals enrolled in workforce development programs. They are designed to be organized and conducted as an integral part of instruction.

They contribute significantly to the motivation, education, and total development of students through activities which develop leadership abilities, citizenship skills, social competencies, and a wholesome attitude about living and working.

They are a teaching tool, which when properly used and guided by the teacher, will enhance, enrich, complement, and supplement the instructional program.

Some of the purposes, goals, and aims common to all of these student organizations are to

- Strengthen leadership abilities
- Strengthen thinking skills
- Enable members to work democratically in groups
- Strengthen creativity
- Strengthen self-confidence
- Improve study and instruction
- Strengthen knowledge, skills, and attitudes that lead to successful employment and further education

Organization, Structure, and Operations

Each organization seeks to attain these objectives within the framework and subject matter of each workforce development program.

The organizational structure and operation of vocational student organizations vary slightly; however, they have many common goals, objectives, and activities. There are variations in local, state, and national membership dues charged by each organization.

In order for a student to be a member in good standing and to be eligible to participate in the total program of activities at all levels, individual membership dues are required. All students can participate in VSO activities in the classroom and laboratory.

Some other requirements for the effective operation of vocational student organizations include the following:

- Teachers should be actively involved in a student organization by integrating the activities into the curriculum.
- Teachers should be permitted to use class time for VSO activities needed to reach vocational education program objectives.
- Instruction time should be used for VSO activities which:

  - Involve all students.
  - Are used to motivate students.
  - Enrich and/or enhance instruction.
  - Are designed to enhance employment and educational opportunities.
- Teachers should have funds for substitutes, travel, and subsistence while taking part in vocational student organization activities on the local, regional, state, and national levels.
- All state policies regarding VSO financial affairs and fiscal practices also apply at the district and local levels.

Relationship to Curriculum and Competencies

VSO activities are based on the competencies needed by all students leading to employment be further education.

They are used as a method of instruction for the development of essential competencies for all students enrolled.

VSO activities provide learning experiences which improve knowledge, increase skills, and enhance acceptable attitudes that advance all vocational students toward their chosen career and citizenship responsibilities. They provide opportunities for leadership development and a broader understanding of one's responsibilities to society. VSO activities should be bona fide learning activities that perpetuate a student's progress toward their chosen career field.

Benefits to Students

Leadership Development

- Opportunity to become a leader through selfdiscovery of talents and their application.
- Development of the ability to communicate with individuals, small groups, and large groups.
- Preparation for professional and occupational leadership.
- Opportunity to develop the skills of followership.
- Opportunity to develop negotiation skills.

Career Development

- Enhancement of career awareness, exploration, and preparation.
- Preparation for occupational excellence and pride through competitive activities.
- Vocational guidance through involvement with adult leaders in the world of work.

Citizenship Development

- Awareness of civic responsibilities.
- Involvement in service opportunities.
- Participation in group processes.
- Involvement in group decision making.
- Development of self management.

Personal Development

- Opportunities for associating with adult role models.
- Opportunities to express and develop a self-concept through fellowship and good recreation.
- Development of strength of character through standards, creeds, and codes of ethics.

- Recognition through awards and competition.
- Preparation for adult living.

NOTE: There are numerous tangible benefits, (scholarships, awards, prizes, etc.) available to members in addition to the previous educational benefits.

Implementation

The basic prerequisites for establishing a local VSO chapter are the following:

- The existence in the local school of a workforce development program area; and
- Interest and support from school administrators, teacher(s), and students.

Upon meeting these requirements, the local group should contact the appropriate VSO office for materials, information and a charter application.

The following steps should then be taken by the local group:

- Develop a local VSO constitution which is not in conflict with that VSO's state and/or national constitution.
- Elect officers and establish appropriate committees.
- Prepare a program of activities.
- Submit application for charter, a copy of the above items, plus membership roster and dues to the appropriate VSO office.

Local Administrative Responsibilities

- Provide resources for organizing, implementing, and maintaining the VSO in each program area.
- Make provisions for appropriate teacher staff development related to VSO.
- Provide leadership and guidance to teachers for the integration of VSO activities into the curriculum.
- Encourage, promote, and help provide opportunities for student membership and participation in activities on the local, district state, and national levels.

State Staff Services

Some of the services that are provided by state staff personnel include:

- Promoting and giving leadership to the development of VSO activities as an integral part of the instructional program and the curriculum.
- Providing leadership and assistance through teacher inservice training, resource materials, and other technical assistance.
- Facilitating leadership programs, competitive activities, conferences, conventions, and other activities in cooperation with local vocational education personnel.
- Coordinating VSO activities from the local level to national level.

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Overview of Vocational Student Organizations

Vocational Student Organizations supported through the Division of Instructional Services, Workforce Development Services, are

Career Exploration Clubs of North Carolina (CECNC)
DECA for Marketing Education
FFA for Agricultural Education
Future Business Leaders of America (FBLA)
Future Homemakers of America/Home Economics Related Occupations (FHA/HERO)
Health Occupations Students of America (HOSA)
Technology Students of America (TSA)
Vocational Industrial Clubs of America (VICA)

Career Exploration Clubs of North Carolina (CECNC)

Introduction

Career Exploration Clubs of North Carolina (CECNC) is a local and state vocational student organization for middle grades students enrolled in exploratory workforce development courses.

The purposes of CECNC are to
- Encourage improvement in scholarship.
- Develop competent leadership.
- Strengthen the confidence of students in themselves and their work.
- Create more interest for exploring tentative occupational choices.
- Develop character, train for useful citizenship, and foster patriotism.
- Encourage and practice thrift.
- Provide and encourage the development of organized recreational activities.
- Serve as motivation for enhancing instruction.
- Familiarize and encourage participation in VSOs at the high school level.

Levels of Organization and Dues

Local – Dues determined by local chapter
Regional – No dues required
State – Annual dues required

Opportunities for Involvement

CECNC members have an opportunity to participate in the following individual, team, and chapter-wide competitive events:

- Career Development Plan
- Career Display
- Career Research
- Career Skit
- Career Video
- Chapter of Excellence
- Creed
- Decision Making
- Helping Hands
- Illustrated Presentation
- Officer Elections
- Parliamentary Procedure
- Performing Arts
- Problem Solving/Creative Thinking
- Public Speaking
- Technical Report Writing

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DECA: An Association of Marketing Students

Introduction

DECA is a state and national organization available to all students who are currently enrolled in Marketing Education courses.

Levels of Organization and Dues

Local – Determined by local chapter
State – Annual dues required
National – Annual dues required

Opportunities for Involvement

Competitive events are available for student participation at the district, state, and national levels.

Competency-Based Individual Written Events
Fashion Merchandise Promotion Plan
Business, Personal & Financial Services Marketing
Food Marketing
General Marketing
Hospitality & Recreation Marketing
Entrepreneurship
Specialty Store Retailing
Merit Awards Program
Free Enterprise

Chapter Projects
Creative Marketing
Free Enterprise
Naylor H. Fitzhugh Learn & Earn
Civic Consciousness
Public Relations

Competency-Based Participating Competitive Events
Apparel & Accessories Master Employee
Apparel & Accessories Supervisory
Food Marketing Master Employee
Food Marketing Supervisory
Retail Merchandising - Master Employee
Retail Merchandising - Supervisory
Quick Serve Restaurant Management
Full Service Restaurant Management
Advertising & Visual Merchandising
Finance & Credit Marketing
Vehicles and Petroleum Marketing
Hospitality and Tourism Marketing

Scholarship Awards Program
- T. Carl Brown Scholarships
- N. C. Merchants Association
- American Business & Fashion Institute
- Asheville Merchants Association
- Winston-Salem Merchants Association
- Hickory Merchants Assoc.
- King's College

National programs, projects and benefits to members
- Activities to Promote Mathematic Skills
- Activities to Promote Free Enterprise & Economic Awareness
- Activities to Build Self-Esteem
- Chapter Achievement Programs
- Chapter Activities
- Community Projects
- Marketing Education Program Enrichment
- Leadership Conferences: District, State, Regional, and National
- Leadership Positions
- Learn and Earn Activities
- Magazines: State and National Levels
- Merit Awards Activities
- National, Regional, State Business Associations Support
- Officers and Committee Members: Local, District, State, and National
- Professional Conferences: Local, District, State, Regional and National
- Scholarship Programs
- School Improvement Projects
- Business Sponsored Activities

FFA: The Organization for Agricultural Education Students

Who We Are	FFA is a state and national organization that serves students enrolled in agricultural education courses.
Purpose	FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career success through agricutural education.
Levels of Organization and Dues	Local - Determined by local chapter Federation - Determined by Federation Region - Determined by Region State - Annual dues required National - Annual dues required
Incentives to Excel	An extensive awards/recognition program is provided for individual members, teams and chapters. These include over 40 proficiency awards, the Agriscience student program and a four-level degree program for individual members; a chapter-wide award programs recognizing community chapter and member development, and more than 15 team career development events. Awards totaling more than $50,000 are awarded each year to individual members and groups for outstanding achievements. These awards are provided through FFA dues, the National FFA Foundation, and the state FFA Foundation.
Benefits to Members	FFA members each year receive a membership card, six issues of the FFA New Horizons magazine; the opportunity to participate in the FFA Camping Program at a minimal cost; the opportunity to participate in numerous leadership development activities/conferences, and the opportunity to participate in the State and National conventions. Over $1,000,000 in college scholarships is awarded annually to deserving FFA members. FFA also offers members the opportunity to participate in international travel experiences, mentoring programs and many other personal development and recreational activities at the local level.

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Future Business Leaders of America (FBLA)

Introduction

FBLA is an organization (with state and national affiliations) for middle and high school students enrolled in business education courses. FBLA's mission is to bring business and education together in a positive working relationship through innovative leadership and career development programs. Co-curricular activities include career exploration, civic service, economic education, and fostering entrepreneurship.

Levels of Organization and Dues

Local - Dues determined by chapter
Regional - No dues required
State - Annual dues required
National - Annual dues required

Opportunities for Involvement

Active FBLA members are provided opportunities to participate in competitive events designed to recognize students who excel in applying school- based learnings to simulated work-based activities.

Competitive Events for Middle Grades Students ***(Grades 6-8)****

Business Communication (MG)
Business Math (MG)
FBLA Creed (MG)
FBLA Principles and Procedures (MG)
Impromptu Speaking (MG)
Parliamentary Procedure (MG)
Public Speaking (MG)

Competitive Events for High School Students ***(Grades 9-12)***

Individual

Accounting I
Accounting II
Business Calculations
Business Communication (HS)
Business Law
Business Math (HS)
Business Procedures
Computer Applications
Computer Concepts
Economics
FBLA Creed (HS)
Impromptu Speaking (HS)
Information Processing Concepts
Introduction to Business
Job Description Manual
Job Interview
Keyboarding Applications
Machine Transcription
Mr. FBL
Ms. FBL
Public Speaking (HS)
Who's Who
Word Processing

Team

Desktop Publishing
Entrepreneurship
Parliamentary Procedure

Chapter

American Enterprise Project
Community Service Project
Crime Prevention Project
Partnership with Business Project
Local Chapter Annual Business Report
Gold Seal Chapter Award of Merit
Largest Local Chapter
Local Recruitment of Chapters
Helen Ragan Chapter of the Year

Scholarships

James L. White Scholarship Award
King's College/Sonja Litton Scholarship
NCVA-BE Broyhill Leadership Scholarship
Operation Enterprises Scholarship
UNC-G School of Business Scholarship

Recognition

NCBEA Outstanding Student Service Award
Businessperson of the Year
Adviser of the Year
Honorary Life Member

* All middle grade competitive events are individual.

FBLA is dedicated to bridging the gap between school and the workplace. Consequently, every program, service and activity is designed to build character, encourage scholarship, and promote competent, aggressive business leadership. Among other benefits, FBLA members receive two publications – *Tomorrow's Business Leader* and *The NC Business Leader* a magazine and newsletter written for business education students. Additionally, members have the opportunity to attend regional, state and national conferences which provide leadership development, problem solving and knowledge integration workshops and activities.

Future Homemaker of America/ Home Economics Related Occupations (FHA/HERO)

Introduction

FHA/HERO is a national organization for middle and high school Family and Consumer Sciences students. It is a co-curricular organization that is a vehicle for mastering Family and Consumer Sciences competencies through leadership, citizenship, and skill development activities. Members develop skills for life through character development, creative and critical thinking, interpersonal communication, practical knowledge, and career preparation.

Membership and Types of Chapters

- FHA Chapters - Any student who is taking or has taken a foundation and pre-career specialization courses is eligible for membership in an affiliated chapter. The emphasis in FHA chapters is on exploration and examination of Family and Consumer Sciences careers.
- HERO Chapters - Any student who is taking or has taken a career specialization course is eligible for membership in an affiliated chapter. The emphasis in HERO chapters is on development of technical and employability skills for Family and Consumer Sciences careers.
- FHA/HERO Chapters - This is a combination of FHA and HERO chapters.

Levels of Organization and Dues

Local - Determined by local chapter
Regional - No Dues
State - Annual dues required
National - Annual dues required

Opportunities for Involvement

FHA/HERO offers many quality programs and activities that encourage students to set career goals, develop self-confidence, and learn about the problems and opportunities inherent in balancing the family and a career. Through involvement in school and community activities members develop a sense of belonging, build self-esteem, gain recognition, and become more autonomous. Chapter projects focus on a variety of youth concerns, including nutrition and fitness, environment, intergenerational communication, parenting, family relationships, and career development. Examples of competive events, programs, projects and recognition activities related to the Family and Consumer Sciences Education Curriculum with emphasis on specific competencies are listed below.

Benefits to Members

- COMPETITIVE EVENTS:
  Applied Technology
  Chapter Service Project
  Chapter Showcase
  Creative Fashion
  Creative Home Interiors
  Entrepreneurship
  Focus on Children
  Food Science
  Food Service
  Illustrated Talk
  Interpersonal Communications
  Job Interview
  Nutri-Snacks
  Parliamentary Procedure
  Skills for Life
- NATIONAL PROGRAMS AND PROJECTS:
  Champions Challenge
  Community Service Award
  Families Acting for Community Traffic Safety
  Financial Fitness
  Japanese Exchange Program
  Leaders at Work in Food Service
  Power of One
  Project Earth 2000
  Step One
  Student Body
- RECOGNITION AND SERVICE:
  Adviser Mentor
  Honorary Member
  Master Adviser
  Member of Year
  Teacher Scholarship

Health Occupations Students of America (HOSA)

Introduction

HOSA is a state and national organization whose mission is to enhance the delivery of compassionate, quality health care by providing opportunities for knowledge, skill and leadership development of all health occupations education students, therefore, helping the students to meet the needs of the health care industry.

Membership

High school males and females in grades 9 through 12 with an interest in health careers.

Opportunities for Involvement

Competitive Events

Category I
– Health Occupations Related Events
Dental Spelling
Dental Terminology
Extemporaneous Health Display
Medical Spelling
Medical Terminology

Category II
– Health Occupations Skill Events
Dental Assisting
Medical Assisting - clerical
Medical Assisting - clinical
Nursing Assisting
Practical Nursing
Surgical Technology (PS Only)
Advanced Nursing (PS Only)
Dental Laboratory Technology
Respiratory Care (PS Only)
Sports Medicine
Veterinary Assisting
Opticianry
CPR/First Aid
Physical Therapy Aid

Category III
– Individual Leadership Events
Extemporaneous Speaking
Job Seeking Skills
Prepared Speaking
Extemporaneous Writing
Researched Persuasive Speaking

Category IV
– Team Leadership Events
Community Awareness Project
HOSA Bowl
Parliamentary Procedure
Outstanding HOSA Chapter
Creative Problem Solving
Biomedical Debate
Outstanding HOSA Member

- Scholarships – $6000 annually
- National Leadership Academy
- National Recognition Program
- National Service Project "Make-a-Wish Foundation"
- Barbara James Service Award
- Gold Star Chapter Program

Technology Student Association (TSA)

Introduction

TSA is an organization (with state and national affiliations) for elementary, middle, and high school students enrolled (or who have completed) technology education courses. TSA's mission is to prepare its membership for the challenges of a dynamic world by promoting technological literacy, leadership, and problem solving, resulting in personal growth and opportunities. In additions to these goals, NC-TSA's mission statement reads "To empower students to become leaders and citizens of the highest quality by creating and sustaining technology programs of excellence in order to serve our communities and nation".

Levels of Organization and Dues

Local - Dues determined by chapter
District - None
State - Annual dues required
Regional - None
National - Annual dues required

Opportunities for Involvement

Competitive events are available for student participation at the regional, state, and national level. Winners may advance from local, to regional, state, and national competition by competing in the following contest categories:

Level I (Middle School & Junior High School)

- Aerospace Technology
- Architectural Model
- Computer-Aided Design/Drafting (CADD)
- Computer Construction & Application (CADD)
- Computer Integrated Manufacturing
- Chapter Team
- Construction Technology
- Control Technology
- Electricity/Electronics
- Engineering Graphic Analysis
- Extemporaneous Speech
- Graphic Design
- Manufacturing Prototype
- Prepared Speech (Revised)
- Promotional Communications
- Research and Design
- Structural Engineering
- Technical Research & Report Writing
- Technology Bowl Oral and Written
- Technology Challenge
- Technology Process Display
- Technology Problem Solving
- Technological Systems
- TSA/National Engineering Design Challenge

Level II (High School)

- Aerospace Technology
- Architectural Model
- Chapter Team
- Computer-Aided Design/Drafting
- Computer Construction & Application
- Construction Technology
- Control Technology
- Desktop Publishing (Pilot)
- Electronic Systems
- Engineering Graphic Analysis
- Extemporaneous
- Imaging Technology
- Manufacturing Prototype
- Prepared Presentation
- Promotional Communications
- Promotional Graphics
- Radio Control Transportation Challenge
- Research and Design
- Structural Engineering
- Technical Research and Report Writing
- Technological Systems
- Technology Bowl
- Technology Challenge
- Technology Problem Solving
- Technology Process Display
- TSA/National Engineering Design Challenge

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Awards & Recognition Programs
Achievement Program
TSA Technology Honor Society
TSA Chapter Excellence
Advisor of the Year
TSA Recognition Awards
William P. Elrod Memorial Scholarships
TSA Scholarships

TSA is dedicated to helping students develop board technological literacy in order that they may become responsible, participating, healthy and successful citizens. As part of our state's technology education program, TSA, helps students acquire and apply design, problem-solving, teaming and leadership skills. Students also learn to use simple and complex tools found in communication, manufacturing, structural, and transportation systems. Students are also given the opportunity to develop authentic skills which are reflective of today's workplace and to demonstrate and be recognized for excellence by others. In addition to competitive conferences, students have the opportunity to attend regional, and state workshops which provide leadership, teaming, and problem-solving development.

Vocational Industrial Clubs of America (VICA)

Introduction

VICA is a state and national organization that serves trade, industrial, and technical students in secondary and post secondary public schools.

Levels of Organization and Dues

Local - Determined by local chapter
Regional - No annual dues
State - Annual dues required for student and professional members
National - Annual dues required for student and professional members

Opportunities for Involvement

Competitive events are available for student participation at the state level of the organization. Winners advance from local competition to regional, state, and national competition by competing in the following contest categories:

Leadership Development Contests
Chapter Business Procedure (Team Event)
Creed "A"
Creed "B"
Current Events
Domestic Affairs
Debate (team event)
Extemporaneous writing
ICT Employee Competency
International Affairs
Job Interview
Opening & Closing Ceremonies (team event)
Prepared Speech
Spelling
Technical Math
VICA Pledge "A"
VICA Pledge "B"

General Contest
Poster Board
Promotional Bulletin Board (team event)
Display (team event)
Outstanding Club (Single & Multiple)
Occup. Health & Safety (Single & Multiple)
VICA Quiz Bowl (team event)
VICA Video
North Carolina State VICA Award
Adam J. Thompson Memorial Award
Willis A. Parker Memorial Award
Outstanding VICA Member Award
Chapter Quality Standards Award
American Spirit Award
American VICA Degree Award
North Carolina State VICA Leader Award
Advisor of the Year Award

Skill Development Contests
Action Skills
Advertising & Design
Air Conditioning & Refrigeration
Air Cooled Gasoline Engine Repair
Architectural Drafting
Auto Body Repair
Automated Manufacturing
Automotive Service Technology
Aviation Maintenance Technology
Cabinetmaking
Carpentry
Commercial Photography
Cosmetology
Diesel Equipment Technology
Electronic Technology
Graphic Communications
Fantasy Nail Art
Industrial Maintenance
Job Skill Demonstration "A"
Job Skill Demonstration "B"
Law Enforcement
Machine Drafting
Marine Mechanics
Motorcycle Service Technology
Precision Machining Technology
Principles of Technology
Residential Plumbing
Residential Wiring
Technical Drafting
Television Production
Welding

Members are part of a national group of skilled youth on the move – working toward future career goals. VICA members make things happen in their schools and communities and in the nation with their leadership and work skills. Members complete at various levels to demonstrate their competencies in skill, leadership, and general contests. Members meet industry, business, and civic leaders and learn to develop leadership and citizenship skills through public speaking events at the community, state, and national levels.

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APPENDIX B
8/96
WD-PS-1

Approval Process for Offerings Workforce Development Education Courses Not in the *Programs of Study*

Rationale for approval process:
In order to promote innovation and ensure that the purposes of workforce development education are being supported, the following approval process has been developed for local school systems to use when they want to offer a course not included in this document. Planning should take place prior to the year a school system wants to offer the course. (School systems are not required to submit a modification request if a third level course is added to any sequence shown in this document.)

Approval process:
Prior to offering a course not in the *Programs of Study*, a local school system must follow these steps and send documentation to the Workforce Development Education Sections, Division of Instructional Services, for approval. (Local school systems are encouraged to consult with program area staff before starting the approval process.)

A. Occupational skill sequence

1. Justify offering the course either by State Plan employment demand or local survey. The survey must include the names of companies contacted and their employment projection for workers in that field for the next three years.
2. Verify that there is student interest to support the course.
3. Develop an equipment and supplies list that has been verified by business/industry. Verify that funds will be available to purchase the needed supplies and equipment.
4. Verify that a certified instructor and adequate facility will be available when the course is to be offered.
5. For the course(s) to be offered, develop competency and objectives listings (blueprint) that have been verified by business/industry. A content outline and a pre- and post-assessment must be prepared also.
6. Submit documentation for Items 1-5 to the Section Chief 120 days before students are enrolled. The section chief will recommend approval or disapproval to the Head of Workforce Development Education who will give final approval. If approved, the annual application will reflect the course offering. Form WD-PS-1 must be attached to the plan.

B. Practical life, consumer, or support course

1. By comparing competencies, determine if a similar course is being offered in another curriculum area or with another course title. Assure that course relates to the purposes of workforce development education as specified in GS. 115-C-15.
2. Verify that there is student interest to support this course.
3. Develop equipment and supplies lists. Verify that funds will be available to purchase the needed equipment and supplies.
4. Verify that a certified instructor and facility will be available when the course is to be offered.
5. Develop a competency, and objective listing (blueprint) a pre- and post-assessment, and outline for the course(s).
6. Submit documentation for Items 1-5 to the Section Chief 120 days before students are enrolled. The section chief will recommend approval or disapproval to the Head of Workforce Development Education who will give final approval. If apporved, the annual application will reflect the course offering. Form WD-PS-1 must be attached to the plan.

APPENDIX B continued
8/96
WD-PS-1

Request to Offer Modification Workforce Development Education Courses Not in the Programs of Study

1.____________________ Date Form Submitted 2. ________________ Implementation Date

3. LEA ____

4. Program Area ____________________ 5. Course ____________________

6. School(s) where course(s) will be offered ____________________________

7. Documentation on file in local school system:

Occupational Skill Sequence			**Practical life, consumer, or support course**		
Yes	No	Documentation	Yes	No	Documentation
___	___	Employment Demand	___	___	Comparison with other courses
___	___	Student Interest	___	___	Student Interest
___	___	Equipment List	___	___	Equipment List
___	___	Supply List	___	___	Supply List
___	___	Certified Instructor	___	___	Certified Instructor
___	___	Adequate Facility	___	___	Adequate Facility

Documentation submitted to State Office:

Yes	No	Documentation
___	___	Blueprint (Competency and Objectives listings)
___	___	Content Outline
___	___	Pre- and post-assessment

____
Workforce Development Administrator Signature

State Office Approval

1. Approval is recommended Yes ___ No ___ Course # assignment ____________

If no, why?

2. Section Chief's Signature ________________________________

3. Head, Workforce Development Education Signature ____________________

Note: When the annual application is submitted to Workforce Development Education, a signed copy of this form must be attached.

NORTH CAROLINA MINIMUM STATE GRADUATION AND POSTSECONDARY EDUCATION REQUIREMENTS*

Content Area	**North Carolina High School Graduation Requirements**	**College Tech Prep Requirements****	**College Prep (University of NC System 4-Year College Requirements **)**
English	4 Courses I, II, III, IV	4 Courses I, II, III, IV	4 Courses I, II, III, IV
Mathematics	3 Courses 3 Courses including Algebra I	3 Courses Algebra I, Geometry, Algebra II or Algebra I, Technical Math I & II	3 Courses Algebra I, Geometry, Algebra II *(recommended one course unit in 12 the grade)*
Science	3 Courses a physical science course Biology other science course	3 Courses a physical science course (related to career pathway (CP)) Biology other science course related to CP	3 Courses a physical science course a life or biological course *(Biology)* at least one laboratory course
Social Studies	3 Courses Government/Economics (ELPS) US History World Studies	3 Courses *Government/Economics (ELPS)* *US History* *World Studies*	2 Courses *(3 for NC Diploma)* US History One elective *(ELPS or World Studies)*
Foreign Language	Not required	Not required	2 Courses Recommended at least two (2) course units in one foreign language with one course unit taken in 12th grade
Computer Skills	A specific course is not required but students must demonstrate proficiency through state testing (starting with the graduation class of 2001)	A specific course is not required but students must demonstrate proficiency in keyboarding and computers	*A specific course is not required but students must demonstrate proficiency through state testing (starting with the graduation class of 2001)*
Health and Physical Ed.	1 Course Health/Physical Education	*1 Course* *Health/Physical Education*	*1 Course* *Health/Physical Education*
Career/Technical	Not required	4 Units of Credits Select courses appropriate for career pathway or major	Not required
Arts Ed. (Visual Arts, Dance, Music & Theater Arts)	Not required (local decision*)	Not required (local decision*)	Not required (local decision*)
Electives	6 Elective Courses Additional electives must be included to meet local graduation requirements	*Elective Courses* *Additional electives must be included to meet local graduation requirements*	*Elective Courses* *Additional electives must be included to meet local graduation requirements*
Total	20 courses + Local Requirements	Depends on Local Requirements	Depends on Local Requirements

* LEAs may require additional courses for graduation.

** A high school diploma or its equivalent is required as well.

Note: Italics indicate items necessary to meet NC graduation requirements but not specific requirements to the course of study.

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Evaluation Form
Programs of Study and Support Services Guide
Workforce Development Education

This document has been prepared to assist local school systems in planning effective and comprehensive workforce development education programs. Please let us know how helpful it is to you by filling out this evaluation form. Note that the more specific and clear your suggestions are, the more useful and influential they will be in future planning.

Reviewer's Name: ______________________________ Position: ____________________________

School or Business Name: ______________________________ City: ____________________________

Part(s) Evaluated: _____ Part I: Workforce Development Education in North Carolina
Planning, Resources, Work-based Learning, Course Offerings
_____ Part II: Program Area Planning
List program area(s): ____________________
_____ Part III: Support Services - Special Populations
Description, Functions, Definitions, Service Delivery Model

This Document:	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1) Is well structured and focuses on essential concepts and information.	5	4	3	2	1
2) Reflects the need for local school systems to have flexibility to accommodate varying local patterns of organization, resources, and needs.	5	4	3	2	1
3) Has components that are useful to program planners (principals, counselors, teachers, and program administrators) for explaining or clarifying program.	5	4	3	2	1
4) Has components that can be used with advisory groups or business and industry leaders for explaining or clarifying programs.	5	4	3	2	1
5) Has components that can be used with parents for explaining or clarifying program.	5	4	3	2	1
6) Promotes career exploration development	5	4	3	2	1
7) Promotes work-based learning.	5	4	3	2	1
8) Supports the connection between workforce development and academic studies.	5	4	3	2	1
9) Is easy to use.	5	4	3	2	1

Return to:
Workforce Development Education
NC Department of Public Instruction
NC Education Building, Room 6029
301 North Wilmington Street
Raleigh, NC 27601-2825

(over)

COMMENTS: